MODERN PACKAGING

DESIGNED AND PHOTOGRAPHED FOR MODERN PACKAGING BY RUDY MULLER

SUCCESS STORY: *Sportackle, p. 124*

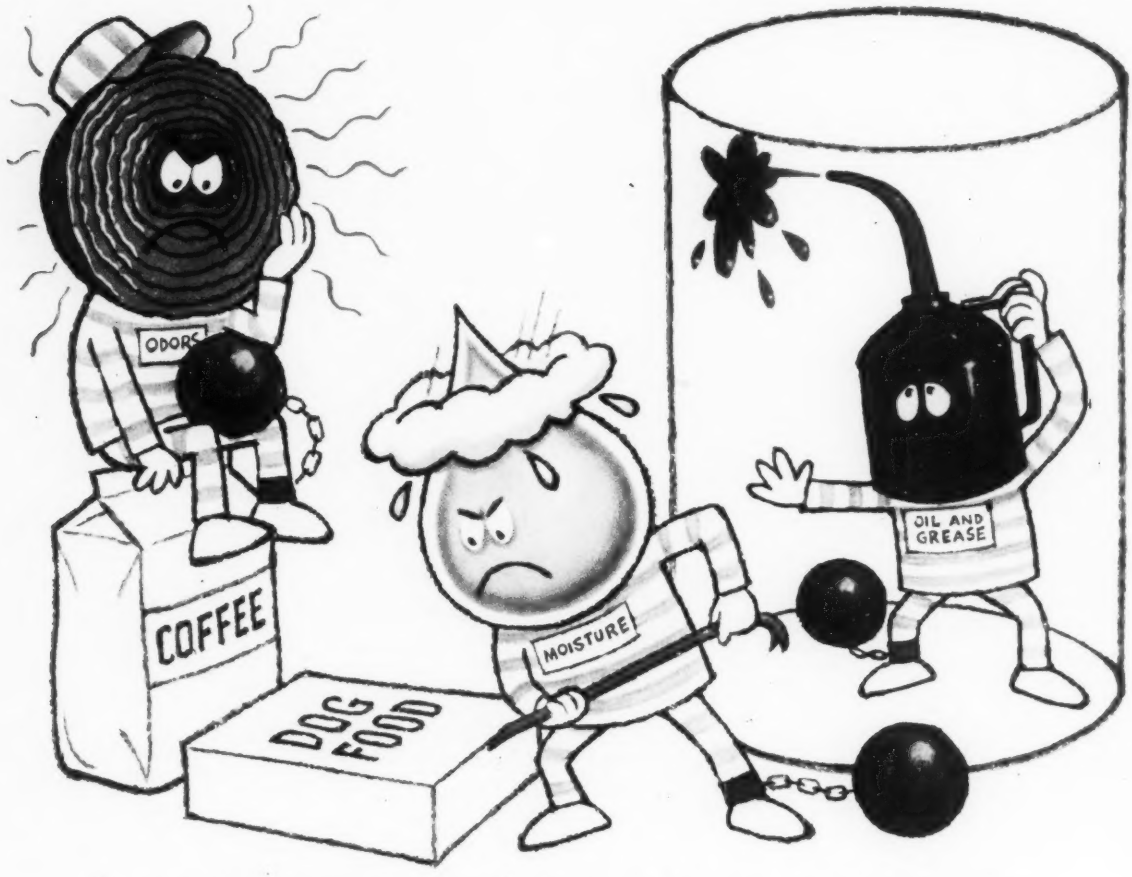
Special report on 'deceptive packaging,' *p. 107* / *Background for Packaging, p. 39* / *World Report, p. 76*

Sounding Board, p. 63 / *Packaging Pageant, p. 114* / Complete contents, pp. 2-3

AUGUST 1961

RESYN® 3600

POLYVINYLIDENE CHLORIDE LATEX FOR PROTECTIVE COATINGS



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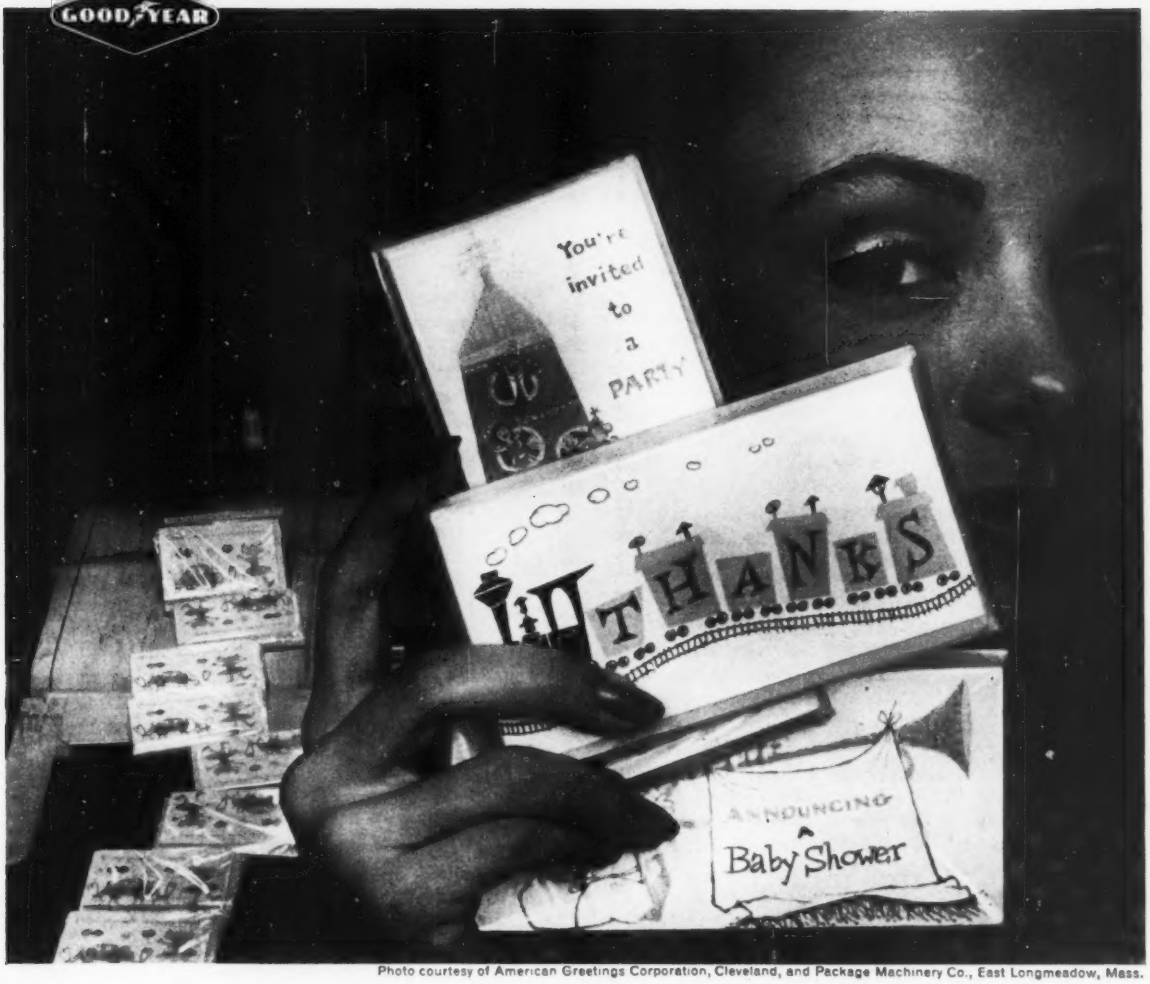
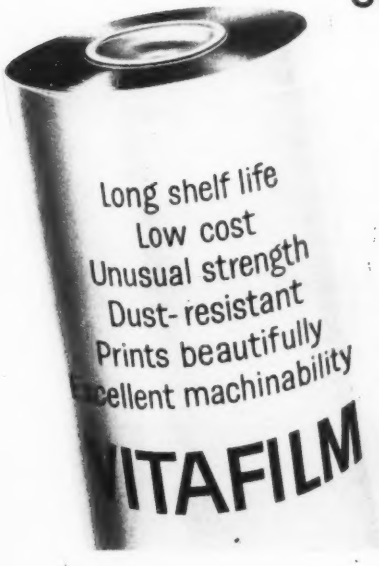


Photo courtesy of American Greetings Corporation, Cleveland, and Package Machinery Co., East Longmeadow, Mass.

Cuts breakage...cuts costs



VITAFILM wrapped packages stay wrapped until you want them opened. VITAFILM seals securely, without cracks or wrinkles. It stays fresh-looking, doesn't split or run. And its crystal-clear transparency does a wonderful selling job for hardware and produce, as well as paper products.

What's more, you can probably convert your present packaging equipment to VITAFILM at little or no cost. It handles easily in packaging machinery—seals quickly and permanently over a wide range of temperatures. For complete information, write: Goodyear, Packaging Films Dept. H-6418, Akron 16, Ohio. Lots of good things come from Goodyear.

by GOODYEAR

Vitafilm, a Polyvinyl chloride—T.M. The Goodyear Tire & Rubber Company, Akron, Ohio

IN THIS ISSUE OF MODERN

AUGUST 1961 / VOLUME 34 / NO. 12

89 **Shifting trends in printing**
Current developments in package printing are nothing less than dynamic. Yet even some of the most experienced packagers are not fully aware of the sweeping technical improvements in printing that can return greater merchandising wallop for every dollar spent on design. Nowhere has the improvement been more striking than in folding cartons, the subject of this first in a series of articles on printing. Here is what carton users need to know about new advances in printing that can lead to improved quality at lower cost.
General interest.

97 **Lightweight-cellophane wraps**

Never underestimate the power of cellophane. In new lightweight grades with increased yield value, it is back in the scramble for low-cost honors in big-volume packaging markets. An example of dramatic improvement in price and yield is given by a thin (0.8-mil), high-barrier coated cellophane used by Zaffere's Bakery to wrap a line of baked goods. Easy to run, the film is reported to cut material costs by up to 16%.
Special interest: all film users.

98 **The squeeze is on**
In a bold attack on the shelf-space problem, Kleenex facial tissues now appear in a folding box that is only half the depth of the former container—with no reduction in contents. The trick is simply mechanical compression packing of the paper tissues. Kleenex's new material-saving box doubles retail profit potential and also is more convenient for consumers.
Special interest: paper goods, supermarkets.

102 **Lilly moves to plastics**
Purely for practical reasons, blown high-density polyethylene bottles have been adopted as a basic package for ethical pharmaceuticals by Eli Lilly. Their introduction climaxes a painstaking three-year research program that is worthy of step-by-step study by all packagers. This company's swing to plastics is particularly significant because a pharmaceutical producer, perhaps more than any other packager, must be absolutely sure that a contemplated change in packaging is for the better.
General interest.

107 **'Deceptive packaging'**—*A SPECIAL REPORT*
Suddenly, so-called "deception" in the packaging and labeling of consumer goods is a headline making national issue, with the loudest clamor coming from a Senate investigative committee's public hearings. But F&DA and FTC also have beefed up their enforcement activities and promise a widespread crackdown. Here is the up-to-the-minute story—including authoritative advice on how to avoid a deception charge—on a situation that can pin on all packagers the sins of a few unscrupulous practitioners.
General interest.

111 **Versatile sell in corrugated**
Showing how a standard old material can be taught new tricks, Faultless Caster has adopted a sleeved corrugated tray for a hardware product that serves as a hang card or a bin package. The dual-purpose container meets the needs of self-selection outlets or clerk-service stores.
Special interest: marketing, sales, designers.

112 **Quick-change labeling of film bags**
How do you label a thousand varieties of the same product—and do it with speed, efficiency and economy? Acme-McCrary, hosiery, answers this broad problem with the adoption of a new

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combination feeder, printer and pressure-sensitive labeler that handles cellophane envelopes at more than 15,000 per day, an increase of 233%. The intermittent-motion machine, which offers the plus values of high-quality printing and accurate label alignment, has a miniature letterpress attachment which can be switched from one set of data to another in 10 seconds.
A production-methods article.

116 **Shrink: a new dimension in films**
One of the fastest developing trends in packaging is the use of oriented films which shrink to fit. And new applications are sure to come as more packagers adapt the materials at hand to their particular needs. One major supplier predicts that the use of shrink films—combining "memory" with increased strength and barrier properties—this year will jump 300% over 1960. Here is a detailed rundown on the eight shrinkable films now available and on methods for applying them.
A production-methods article.

124 **Sportackle**
A *Success Story* (see cover). A 5% increase in company sales despite a big industry slump is the record of success achieved by Horrocks-Ibbotson since launching a line of fishing equipment in colorful blister packages that are the first to combine plastic foam with plastic sheet in a hang-card container. The striking new packages have given the company entry into four markets and have recaptured a fifth—variety stores—that was all but lost 15 years ago.
General interest.

126 **Moist sponge in a blister tray**

General Mills introduces an idea in convenience packaging adaptable to a wide variety of household cleaning aids. The company's moistened O-cel-o sponges are being test marketed in a thermoformed high-density polyethylene tray that does re-use duty as a storage dish when its heat-sealed film cover is stripped off.
Special interest: cleaning aids, marketing.

TECHNICAL & ENGINEERING

129 **The free-piston aerosol**
Development of a practical pressure container with a loose-fitting piston to separate product from propellant makes it possible to exploit the convenience of aerosol packaging for a broad range of viscous items. Here are the principles and design considerations which are involved.
By H. T. Hoffman, Jr., and Nicholas Marchak.

133 **Bioriented polypropylene film**
Kordite research on this tough, glossy packaging film indicates that orientation offers important gains in tensile strength, barrier properties, low-temperature performance, abrasion resistance, tear strength, dimensional stability and clarity.
By John F. O'Donnell and J. Thomas Selldorff.

140 **Wax-laminated carton**
Significant to all packagers using cartons is the new Grape-Nuts container. It is a single-wall, wax-laminated carton (without overwrap) that increases packaging-line efficiency, boosts product shelf life up to 30% and offers new convenience and sales appeal. *By Walter C. Utschig.*

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MP

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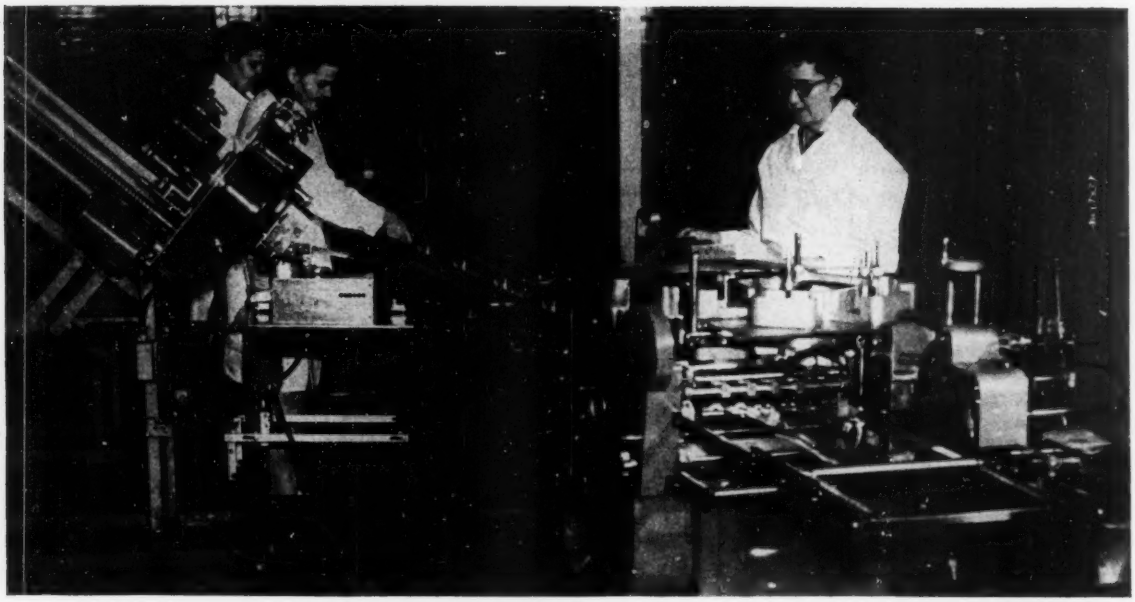
ABC ABP



Integrated luncheon meat line has two 6' extended infeed conveyors to accommodate 2 slicing machines. Speed of slicers sets production rate at 50 packages a minute. WRAP-KING has 75 units-per-minute capability, can be used for cheese when necessary. Labeling is done automatically.

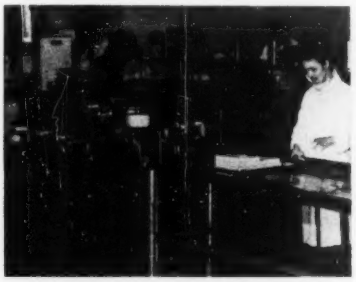
Ralphs reduces cheese and meat wrapping costs 75% with C & K WRAP-KINGS.

From their new Deli Kitchen, Ralphs Grocery Co., Los Angeles, supplies 40 branch supermarkets with packaged cheese and luncheon meat from two completely integrated lines that utilize high-speed, automatic Crompton & Knowles CKM WRAP-KINGS.

The cheese line packages 1200 pounds per hour and requires 4 operators, 10 less than were necessary prior to installing the WRAP-KING. The luncheon meat line accommodates 2 slicers and requires 5 operators to turn out 50 packages per minute ranging from 5 to 14 ounces.

Mr. Dewey A. Hodgin, Manager, Deli Kitchen, states, "The Model CKM gives us a neat, tight wrap with the eye appeal necessary for consumer acceptance. The machines are very versatile and have a high rate of production with very little maintenance. And our WRAP-KING installations have resulted in a 75% reduction in labor costs."

Ralphs Grocery is just one of an increasing number of companies installing integrated packaging lines built around C & K high-speed automatic equipment. Whether your requirements involve wrapping or can packing, there is a C & K machine to do the job. For complete information, including leasing arrangements write Wrap-King Division, Crompton & Knowles Packaging Corporation, Agawam, Mass., U.S.A.



CKM cheese machine requires only one girl feeding to turn out 1200 lbs. per hour, can use almost any commercially available film.

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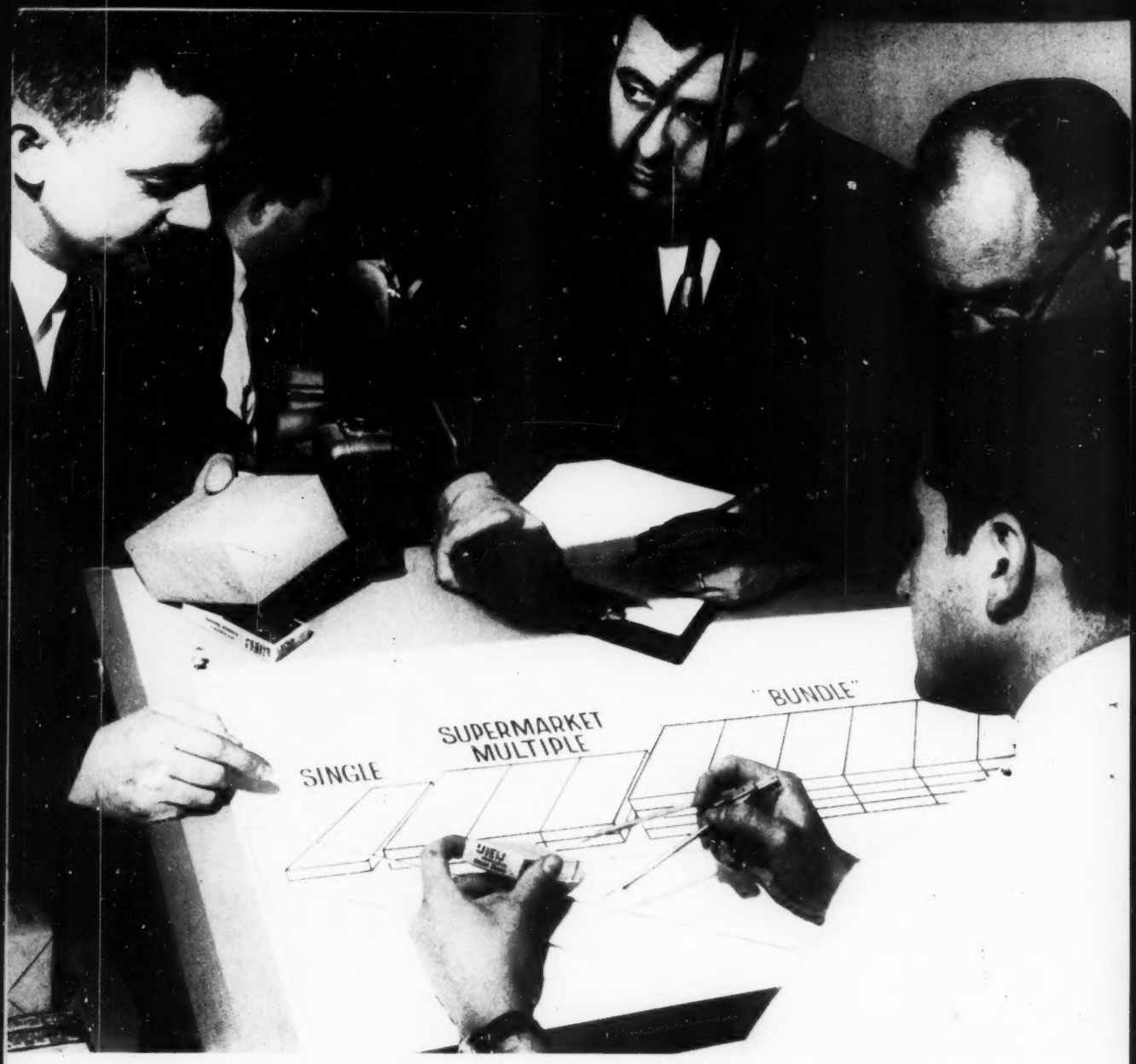

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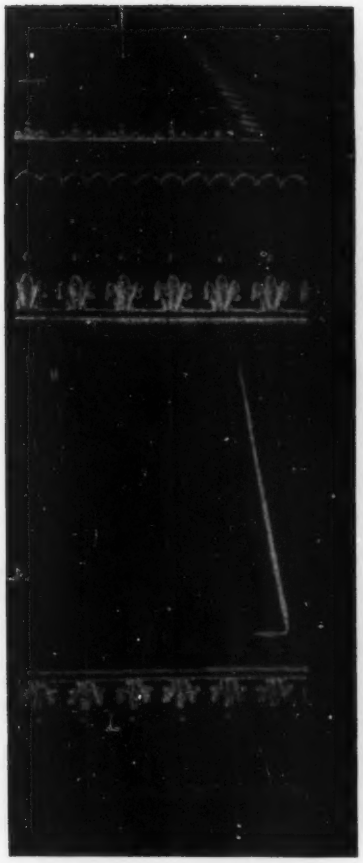

Plastic watch case looks like leather

This Wyler watch case is hard to distinguish from one made of leather, yet it's molded from tough, less expensive hi-impact DYLENE® polystyrene. It opens and snaps shut without chipping or troublesome cracking around the hinge. The deep red case is molded to a pebble finish and heat stamped with metallic gold trim. Box designed, molded and manufactured by Custom Manufacturing Company, Jersey City, New Jersey.

Push-button age needs plastics

Today's housewife spends a lot of time pushing buttons. The obliging Valve Corporation of America supplies her with aerosol actuators and caps molded of SUPER DYLAN® high-density polyethylene. They (1) cost less than metal, (2) easier to assemble, (3) have a smooth, glossy, rust and stain-resistant finish that can't chip or dent. Avon, Revlon, Coty, Lanvin, Fuller Brush, Stanley Home Products and Simoniz are just a few users.

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High-speed packaging machines now make it possible for you to save real money—as much as $170.00 on each 1,000 pounds of the crisp, clear film you may now be using—and still have a better package! How? Use film made from SUPER DYLAN® high-density polyethylene and take advantage of its unidirectional, straight-line tear, low permeability and clarity. Furthermore, it is unaffected by extremes in temperature and humidity.

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For complete information about Koppers family of fine plastics for packaging, write Koppers Company, Inc., Plastics Division, Dept. 1532, Pittsburgh 19, Pa.

KOPPERS

The case of the flying flour bag

FEARLESS FULLER: Nice catch, Miss Watson!

MISS WATSON: *Oof! I played error-less ball on my business school softball team—but I never thought I'd be fielding flour bags!*

FEARLESS FULLER: And even with my fireball pitch, no flour seeped out!

MISS WATSON: *I expected to be the "lady-in-white" when I caught the bag!*

FEARLESS FULLER: Not a chance! That bag's sealed with Fuller #2575! Before they found out about #2575, the bagmaker and his customer, the flour miller, often had trouble sealing clay coated stocks used in the bags.

MISS WATSON: *And the flour seeped out, I suppose.*

FEARLESS FULLER: You're so right, Miss Watson! But that's *all in the past* with Fuller #2575. It's a high-speed duplex paste that gives a strong flexible bond. No sifting or gapping. Resists oil, grease and moisture too. #2575 seals *all* kinds of duplex bags—tighter than a Scotchman's wallet!

MISS WATSON: *I bet the bagmaker and the flour miller were relieved to learn about Fuller #2575, Fearless.*

FEARLESS FULLER: Especially that flour miller, Miss Watson—now he can grind flour instead of his teeth!

MISS WATSON: *Oh, Fearless—you're so—so—soothing!*

FEARLESS FULLER: Sleuthing's my business, not soothing, Miss Watson—but we Fuller men do keep our customers happy!

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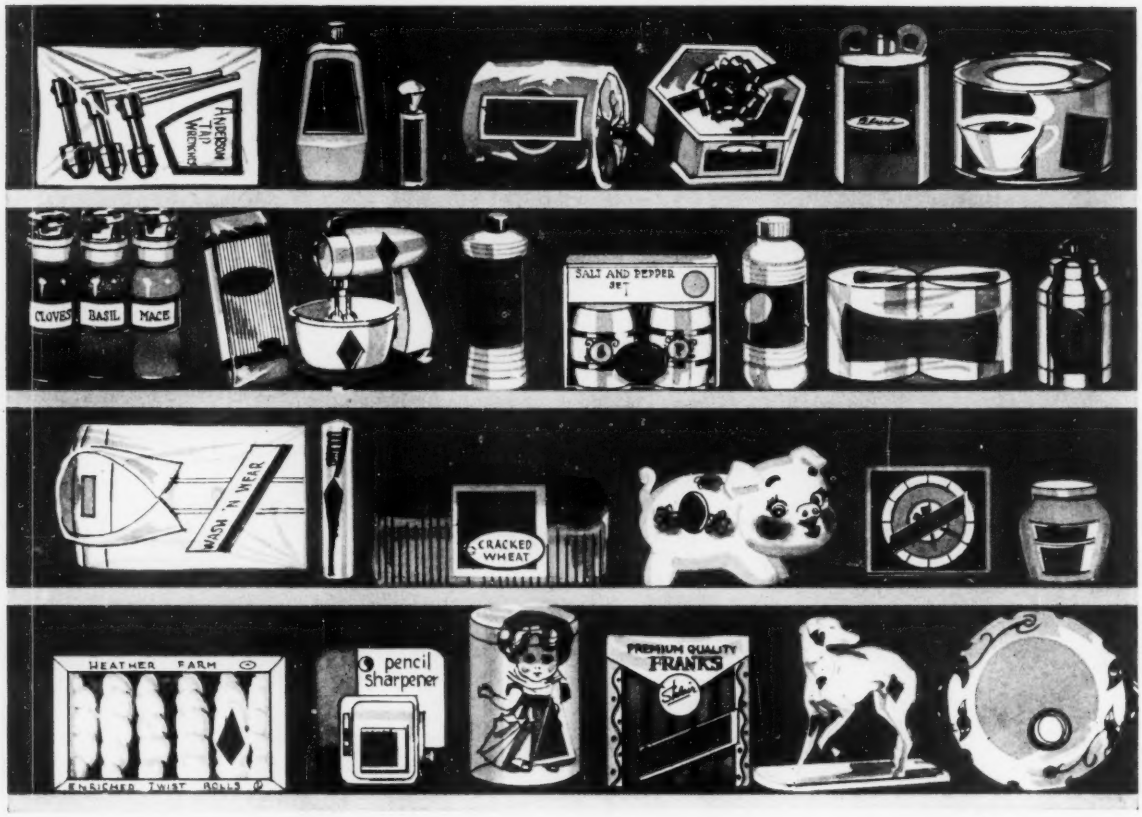

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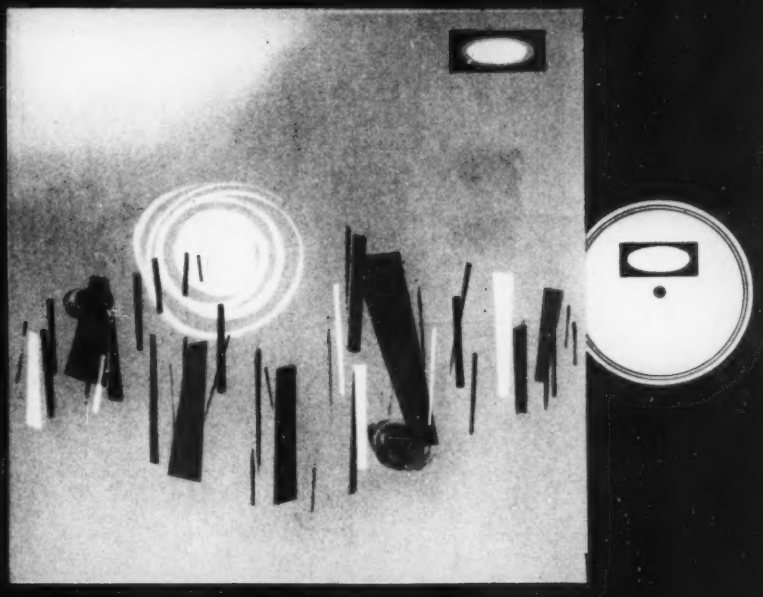


Big assets in record sales are magnificently designed and reproduced album covers. But a big bugaboo is the soiling that results from constant handling and inspection of albums by customers.

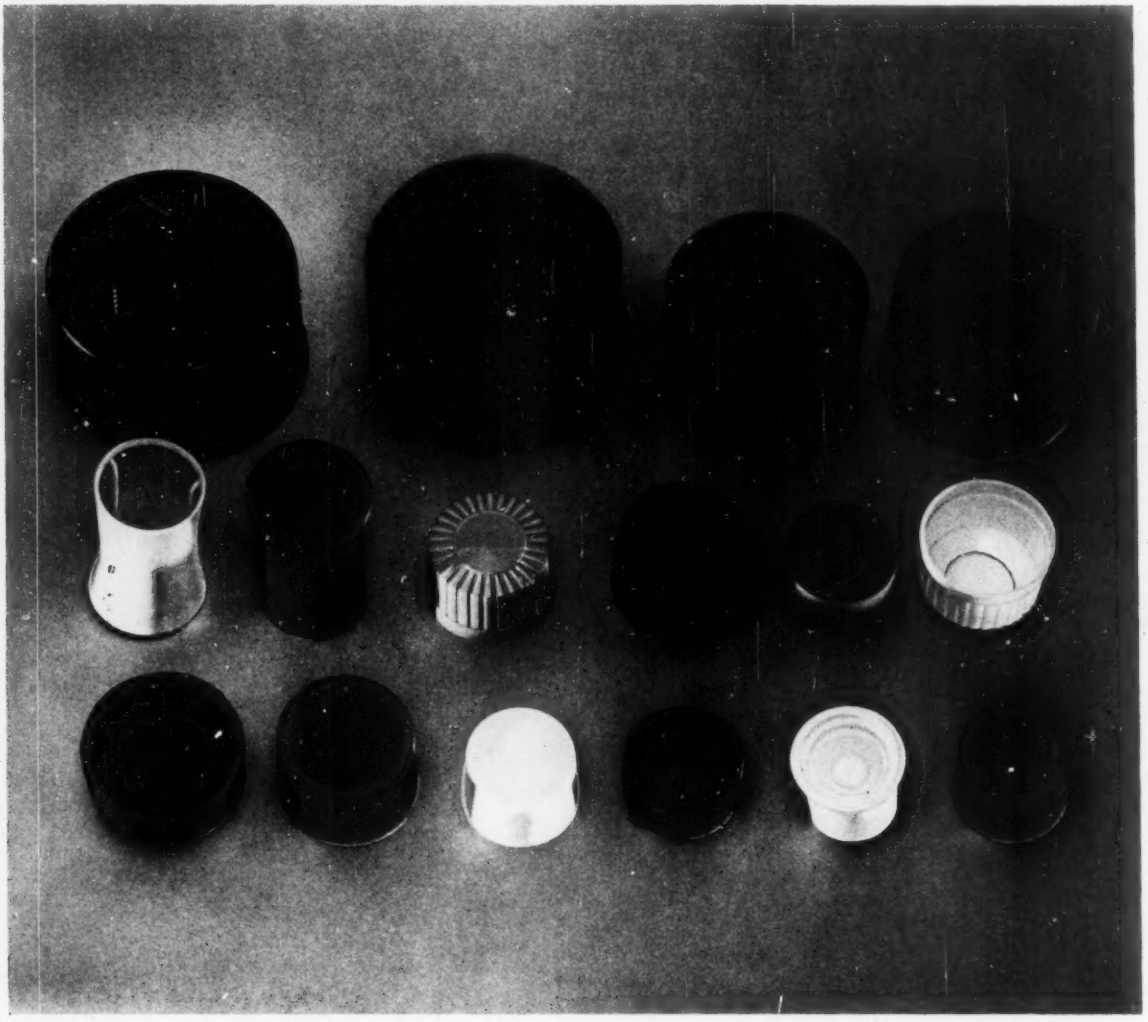
Reynolds has helped lick this problem with a tough, skin-tight wrapping of Reynolon heat shrinkable PVC Plastic Film. Reynolon completely seals the album and protects it and its contents against finger prints, dirt, tampering, and harmful abrasives. Strong and durable, it insures the customer of "factory fresh" records.

Important, too—crystal clear Reynolon actually enhances the color and design of album covers, making a brilliant display.

Reynolon also adds sales appeal and protection to a wide variety of other products, including soft goods, paper products, and food.

For details and technical assistance on how Reynolon can help meet your packaging needs, contact your nearest Reynolds office. Or write Reynolds Plastics, *Reynolds Metals Company, P.O. Box 2346-RM, Richmond 18, Virginia.*

What's News in Plastics...



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Enjay does not make closures; it supplies Escon polypropylene to manufacturers of closures, containers and many other products. For more facts about the balanced combination of properties offered by Escon, write to Enjay, 15 West 51st Street, New York 19, New York.

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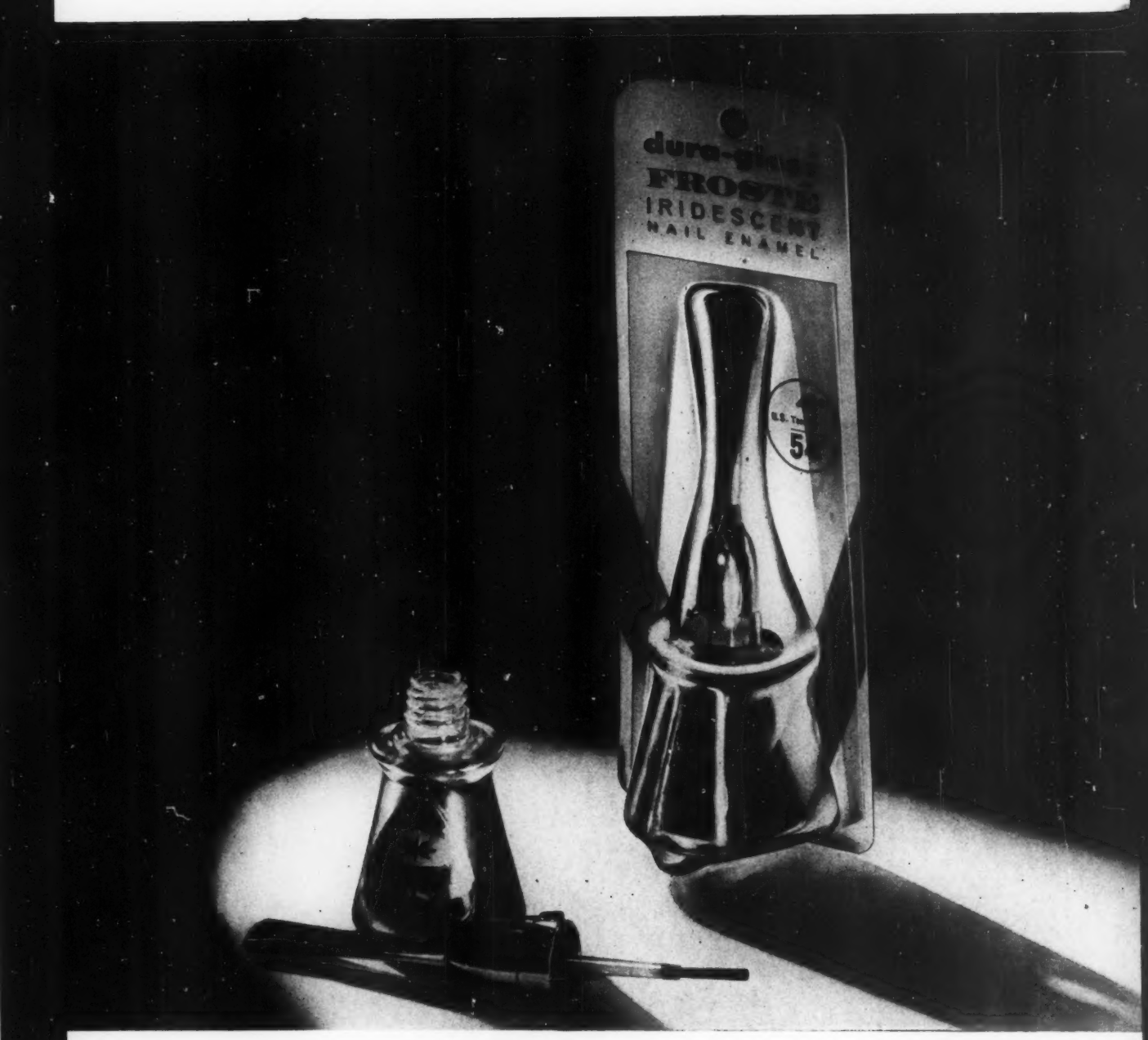

DAVIS ACETATE
makes beauty products more beautiful!

Label and applicator on this Frosté nail enamel bottle sparkle like polished gold in a glistening, crystal-clear blister of Davis Acetate. The true, iridescent shade of the enamel comes through, too, bidding brightly for attention, and making customer selection easy.

The package was assembled by AR. WINARICK'S facilities with a blister produced by PLASTIC ARTISANS, Port Chester, N. Y., who chose Davis Acetate for its exceptional clearness, its outstanding durability and protective qualities.

Davis extruded acetate sheets, rolls and film come in all gauges—transparent, translucent or opaque—and are ideal for all kinds of vacuum forming applications.

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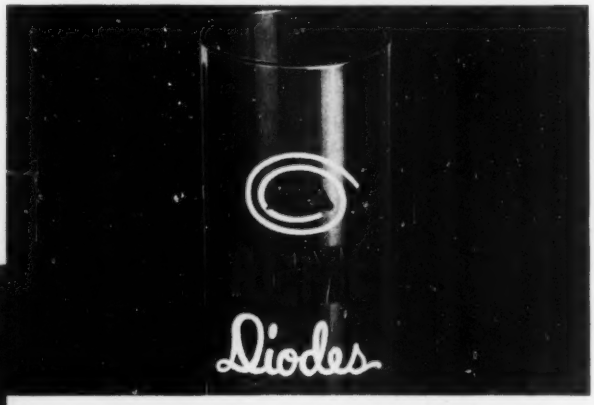
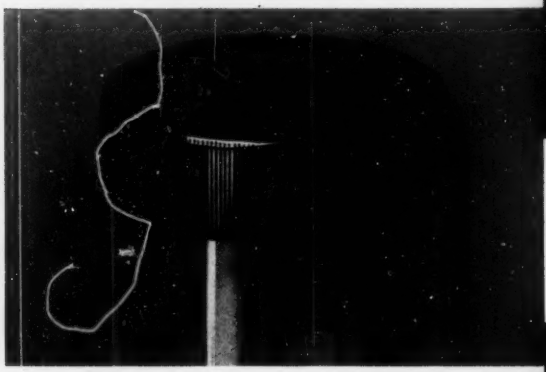
Phone: WYman 1-0980 New York: BArclay 7-6421

LERMER Adds Important NEW Features to *flexible acetate containers*



• Clear, flexible extruded containers • Full width straight opening • No turned-in top • Easy to fill and empty • Streamlined • Seamless • Can be printed up to 4 colors



• Molded polypropylene closures for uniform fit • Knurled for easy grip • Engineered to hold tight—Easy to remove and replace • Closures available in assorted colors • May be hot stamped in contrasting color with trade mark or other desired copy

• Reinforced molded bottoms • Firm wide base — Prevents tipping over • Available in colors

• Containers available in diameters from ¼" through 1¼" • Any lengths up to 7" — Longer lengths on special order • Can be furnished in long lengths open at both ends. You can make your own containers by cutting to your sizes. We furnish closures.

Now is the time to consider the flexibility, the protection, the beauty, the features and economy of Lermer flexible plastic containers. Ideal for many products. **Write today for samples.**

ALSO A COMPLETE LINE OF RIGID MOLDED CONTAINERS

LERMER PLASTICS, INC.

502 SOUTH AVENUE · GARWOOD, NEW JERSEY

PIONEERS AND SPECIALISTS IN PLASTIC CONTAINERS SINCE 1919

give it more sales power by packaging it in Cellu-Craft's Clearer Laminated and Extrusion Coated Materials. Don't veil the beauty or utility of your product behind cloudy stocks. Let the clear superiority of Cellu-Craft's laminated constructions *portray* and *protect*... so your customer can *see* and be *sold*. Clarify your sales picture today! Find out how Cellu-Craft's consistently uniform materials —produced on America's most rigidly controlled equipment—can help you achieve more volume and profit.

Laminex Division

CELLU-CRAFT
PRODUCTS CORPORATION

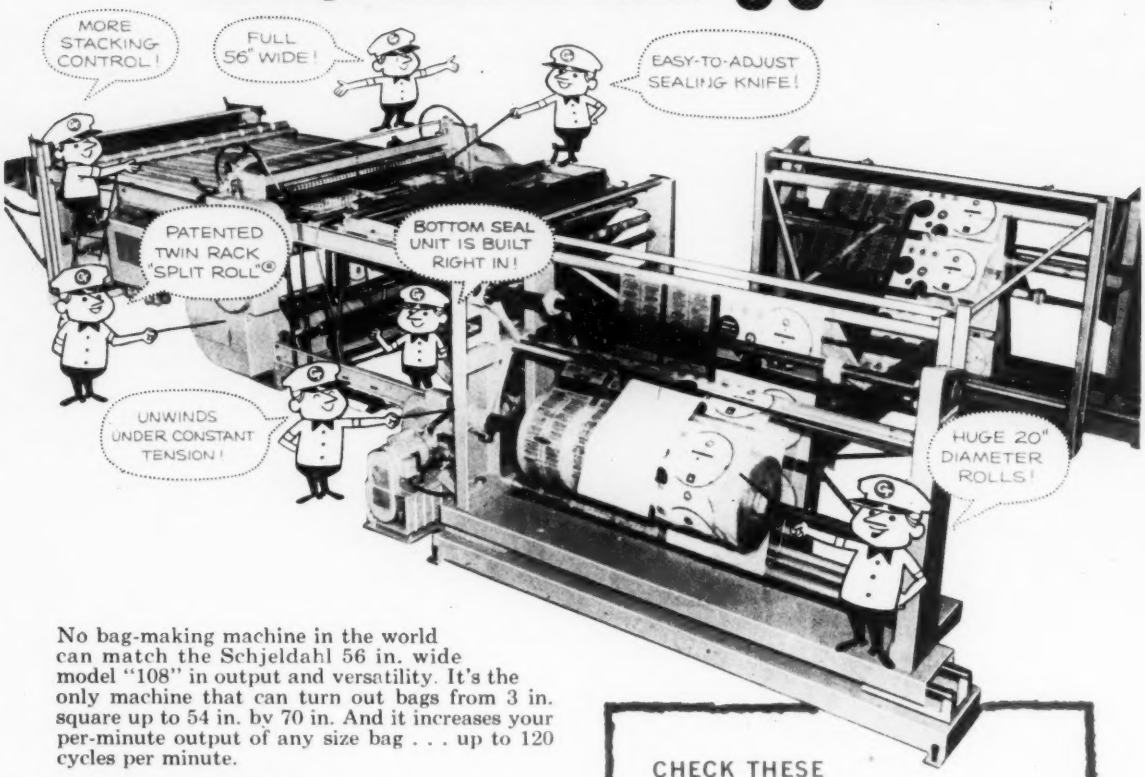
New Hyde Park, New York • Telephone PRimrose 5-8000. Sales Offices in principal cities

DESIGNING of flexible packages. PRINTING: Glolux® Gravure, Process, Line & Tone Flexography on Cellophane, Polyethylene, Glassine, Extrusion Coatings, Laminations, Acetate, Pliofilm, Foil. EXTRUSION COATINGS AND LAMINATIONS on Cellophane, Foils, Mylars, Papers. CONVERTING: Rolls, Sheets, Bags, Pouches, Envelopes.

W·I·D·E·S·T...

Most Versatile Bag-Making Machine Ever

Schjeldahl's NEW 56" MODEL


MORE STACKING CONTROL!
FULL 56" WIDE!
EASY-TO-ADJUST SEALING KNIFE!
PATENTED TWIN RACK "SPLIT ROLL"©
BOTTOM SEAL UNIT IS BUILT RIGHT IN!
UNWINDS UNDER CONSTANT TENSION!
HUGE 20" DIAMETER ROLLS!

No bag-making machine in the world can match the Schjeldahl 56 in. wide model "108" in output and versatility. It's the only machine that can turn out bags from 3 in. square up to 54 in. by 70 in. And it increases your per-minute output of any size bag . . . up to 120 cycles per minute.

SIDE-WELD OR BOTTOM-SEAL

You can change-over from bottom-seal to side-weld quickly and easily on this giant Schjeldahl machine. A bottom-seal, "flying knife" unit can be built right into the machine for fast change-over . . . keeping down-time to a minimum.

YOUR Schjeldahl MAN HAS THE WHOLE STORY

Let him show you how this new 56" machine can solve your converting problems and open up new areas of business. Schjeldahl offers 8 different models . . . in 41" and 56" sizes. Your Schjeldahl representative also has information on the complete line of profit-making Schjeldahl accessories for handling any converting job.

PRODUCTS GT SERVICES **G.T. Schjeldahl Co.**

NORTHFIELD, MINNESOTA

Putting Tomorrow's Materials to Work Today

SATELLOON Schjeldahl

CHECK THESE EXCLUSIVE FEATURES

PATENTED TWIN RACK "SPLIT-ROLL"* offers the versatility of running two different draw lengths and setting each independently. Assures you of greater accuracy in high speed, multiple web operation.

NEW ALUMINUM BOTTOM SEALING KNIFE gives constant heat throughout the bar for better sealing action. Temperature can be controlled to meet any sealing requirements. Knife is easily adjustable.

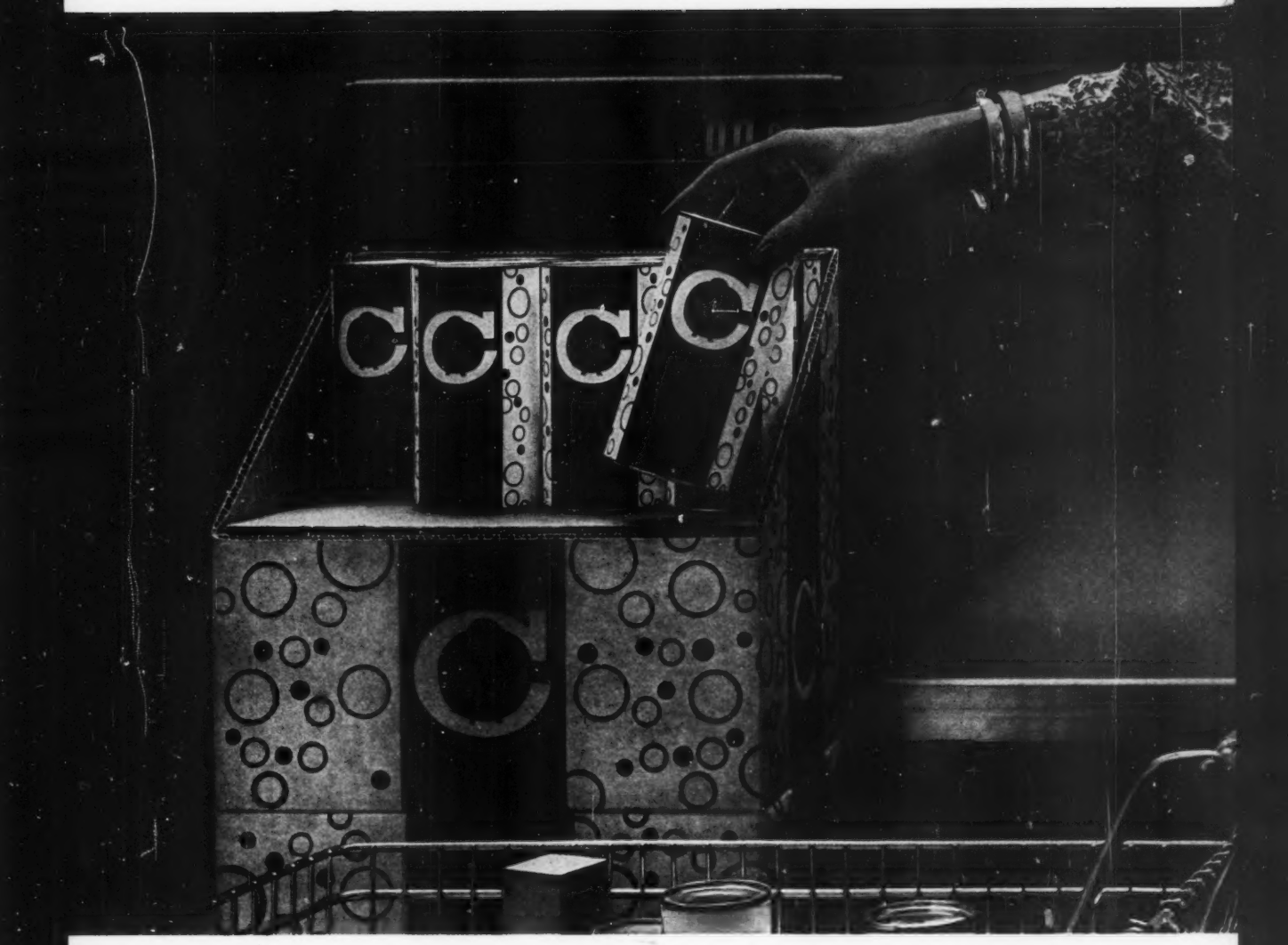
WIDE BELT CONVEYING gives greater control and more positive stacking.

CONTINUOUS UNWIND keeps web under constant tension to eliminate stretching; also allows more control for attachments.

HANDLES ROLLS 20" in diameter. You can make longer runs with less shut down to change rolls.

HANDLES FULL RANGE OF POLYETHYLENE—flat or gusseted tubing, flat or prefolded sheeting, printed or unprinted. For bottom-seal: .001 to .004 mils. For side-weld: .00075 to .004 mils.

*Registered U.S. Patent Office



PROBLEM: How to get sales appeal in your shipping container without the cost of three-color printing.

SOLUTION: International Paper's new *pastel* Gator-Hide® linerboard gives you *three* colors with two-color printing.

THIS DISPLAY container was made with two-color printing—on one of International Paper's new Gator-Hide pastel linerboards.

These amazing new linerboards are the lightest and brightest you can get without printing color on expensive bleached board.

They are typical of the wide range of fine linerboards available to you in the famous Gator-Hide series. Their purpose: *better* packaging at *lower* cost.

Other examples include non-abrasive boards, release-coated boards, weather- and slip-resistant boards and highly printable coated linerboards.

But our work goes beyond the creation of new boards. Packaging experts in our Container Division study the special needs of *your* product. They start with the best materials for the job. And then turn them into rugged—yet lightweight—shipping containers that deliver your product in *top selling condition* at minimum cost.

International Paper can provide you with paper packaging that is designed *—from the very beginning—*to suit your product.

Call any one of our twenty-two Container Division plants. Or contact your boxmaker. He has probably been doing business with us for years.

INTERNATIONAL PAPER

NEW YORK 17, N.Y.

Manufacturers of papers for magazines, books, newspapers • papers for home and office use • converting papers • papers and paperboards for packaging • labels • folding cartons • milk containers • shipping containers • multiwall bags • grocery and specialty bags and sacks • pulps for industry • lumber, plywood and other building materials

Longest-lasting seal in film...

Scotchpak®

BRAND

If you've been frustrated by film seals that leak, try "SCOTCHPAK"—used exclusively to seal the oil-based colorpods in the "Colorizer's"® Paint Color System.

®"Colorizer" is a registered trademark of Colorizer Associates.

The stronger, lasting seal of "SCOTCHPAK" solves the problem of film package dependability. "SCOTCHPAK" is made differently than any other film. It's specially tailored by 3M with the strictest quality-control supervision. "SCOTCHPAK" heat-seals easily at 300° to 400° F., 20-60 psi pressure, making a seam that is as strong and impermeable as the film itself . . . and as long-lasting as any packager could hope a film would be. "SCOTCHPAK" stays pliable at temperatures from −70° F. to 240° F. *If you have been let down by seals that let go, it's time you tried* "SCOTCHPAK." We will be happy to send you samples and work with your packaging people. Write or call Film Products Group, 3M Company, 900 Bush Ave., St. Paul 6, Minn. Dept. ICA-81.

MINNESOTA MINING AND MANUFACTURING COMPANY
...WHERE RESEARCH IS THE KEY TO TOMORROW

3M

© 1961, 3M CO.; "SCOTCHPAK" IS A REGISTERED TRADEMARK OF 3M CO., ST. PAUL 6, MINN.

Only Thatcher brings you all 4

pol'y · prop'yl · ene Lightest of all solid plastics. Heat resistant Thatcher polypropylene tubes can be sterilized without distortion. Excellent moisture retention.

lin'e · ar pol'y · eth'yl · ene One of the most dependable of plastics. Gives good performance under almost all conditions. Excellent temperature resistance, high and low.

vi'nyl For lubricating oils and greases, Thatcher vinyl tubes are unsurpassed. Take advantage of vinyl's pleasant texture, surface gloss and ease of printing.

pol'y · eth'yl · ene If your product requires a tube that stays resilient even at low temperatures, pick polyethylene. Better than average water vapor resistance.

Which plastic tube is best for your product? Only Thatcher makes all four. Only Thatcher has the know-how to tell you which is best for your purposes. Call us...write us...we are happy to help. *A great package is a great Idea.*

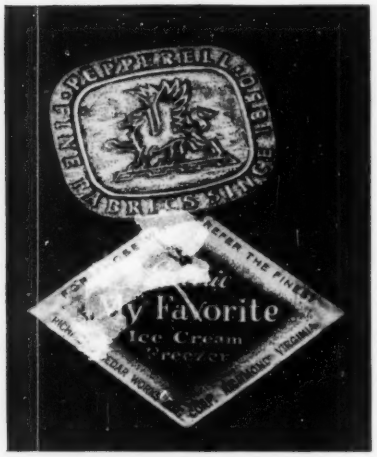
THATCHER GLASS MANUFACTURING COMPANY
375 Park Avenue New York 22, New York
CELON DIVISION, Muscatine, Iowa PLASTIC CONTAINERS, New York, N.Y., MCKEE DIVISION, Jeannette, Penna.

New technical advances
in labeling...packaging...tagging

New-found answers to top management's questions are now bringing smiles to the faces of busy packaging, purchasing and sales promotion executives.

Questions like . . . "Why can't our products have labels as attractive and sales-compelling as those on best-selling packaged goods?" . . . "Why can't we get better display space for our products?" . . . "Isn't there another way to lower the high cost of paperwork?" . . . "Can't we get more work out of our costly tabulating equipment?"

All these questions and many more are now being answered in novel ways by Dennison . . . originator of more new labeling, tagging and packaging techniques than any other single source.



New look of distinction in brand identification

Prestige-building, embossed foil labels on famous-brand, film-wrapped bed sheets are not surprising. But, when their "golden" gleam draws all eyes to ice cream freezers, you might ask, "What's going on here?"

Sales-minded label buyers can tell you. They'll tell you that prestige labeling is no longer the exclusive property of foods, cosmetics and other self-service packaged goods. They'll tell you that the economical elegance of Dennison PRES-a-ply foil labels adds a profitable sales-plus to home appliances and other hard goods. They'll also tell you that Dennison's exclusive printing, embossing and die-cutting techniques can duplicate any effect you may have envied in packaged goods labels. Applied by finger-tip pressure to just about any surface, these eye-catchers have a tested record of lifting the value of non-packaged products far above price.

Less glamorous, but equally effective, Dennison PRES-a-ply labels . . . automatically dispensed and applied . . . are helping all kinds of manufacturers score profitable point-of-purchase successes with price-off, premium and other promotions. Our new fact folder tells the whole story . . . both prestige and promotional. Write for it today.

Increasing impulse buying with blister packaging

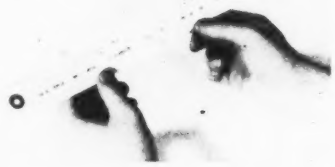
When self-selection items are too small to tag or label, two other alternatives face aggressive merchandisers: carding or blister packaging. Which is better?

Paul Buhl, assistant merchandise manager of Dennison's Resale Products Division, faced that decision within the past year. He chose blister packaging for the Dennison Glue-Point Dotter . . . now a best-seller in stationery stores and departments from coast to coast. This choice was made in spite of the fact that Dennison is also a leading supplier of merchandising cards to America's top companies.

Blister Packaging offers three advantages. 1. Retail merchandise buyers, responsible for maximum volume per square foot of counter space, prefer blister-packed items because they sell faster than carded merchandise. 2. Blister packs keep merchandise clean, enhance its appearance and motivate dominant display on counter, rack or pegboard. 3. They have the pick-up appeal that spurs impulse buying; yet they reduce pilferage to a minimum.

You pay nothing extra for Dennison's own successful retail experience with blister packs. You can be sure of unbiased recommendations because Dennison uses all kinds of packaging for its gift wrappings, crepe paper, diaper liners and more than 5,000 other packaged items sold at retail.

Dennison's blister packaging service is complete. It includes design, manufacture of both cards and blisters and contract assembly. You can choose all or any part of this start-to-finish service and be sure of maximum point-of-purchase impact per dollar. Our new fact folder tells you all you need to know about blister packaging. Write for it today.



Pin-fed tags and labels automatically imprinted by tabulating equipment!

Owners of high-speed tabulating equipment have struck it rich. They're now reducing paperwork costs, increasing clerical efficiency and collecting extra dividends from data-processing investments by using Dennison tags and PRES-a-ply labels as continuous print-out forms for Burroughs, Friden, IBM, Remington-Rand and other pin-fed data processing systems. This direct, automatic translation of information from punched cards or tape to tags and labels eliminates the extra cost of manual, typewriter, plate and stencil imprinting.

Dennison pin-fed PRES-a-ply labels are now being used to save time and costs in posting payroll, sales and order data on record cards . . . in labeling file folders, bins and box ends . . . in production and inventory control systems. Because Dennison PRES-a-ply labels adhere to just about all surfaces with finger-tip pressure, their use is virtually unlimited.

Dennison pin-fed continuous tags, automatically imprinted by tabulating equipment, are also being used to cut the costs and raise the efficiency of identification, production, inventory, packaging and shipping systems.

NEW FACT FOLDER

If you're looking for new ways to increase sales and reduce costs, this free fact folder will be a gold mine of information for you. It describes techniques and shows samples of tags, labels and other devices now being employed by America's most successful firms. For your free copy, write directly to Dennison Mfg. Co., Dept. V-22.

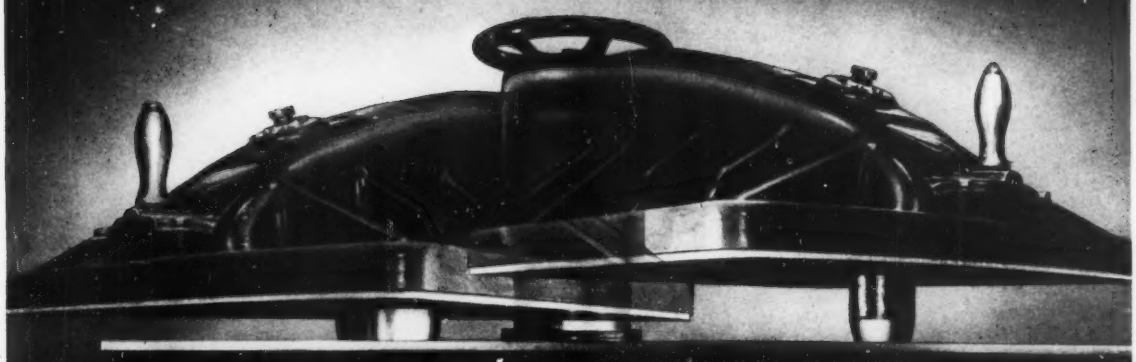
Dennison

Helping you compete more effectively

FRAMINGHAM, MASSACHUSETTS

Only Hytronic®

WITHOUT BEAM ADJUSTMENT



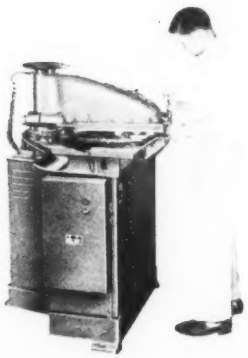
Cuts This Low . . . Cuts This High

For precise, controlled cutting of blister packaging and other plastic materials, only United Hytronic® Cutting Machines can use dies differing in height as much as 2⅜" without beam readjustment. Faster, more accurate cutting and increased production result.

Maximum die height, 5". Minimum, 5/16".

Users say of Hytronic, "if the beam clears the die, it cuts." Dies last longer. You save money on die sharpening and replacement costs. Only Hytronic electronically evaluates the cutting quality of each die; considers the resistance of the materials to be cut then automatically uses only enough power to make the cut.

If you manufacture, mold or fabricate plastics for blister, skin, slide or container packs, consider United Hytronic Cutting Machines.



AVAILABLE FOR SALE OR LEASE

United

UNITED SHOE MACHINERY CORPORATION

140 FEDERAL ST., BOSTON 7, MASS.

To Cut Costs, Cut with United HYTRONIC Cutting Machines

----------CLIP OUT AND MAIL----------

Dept. 2

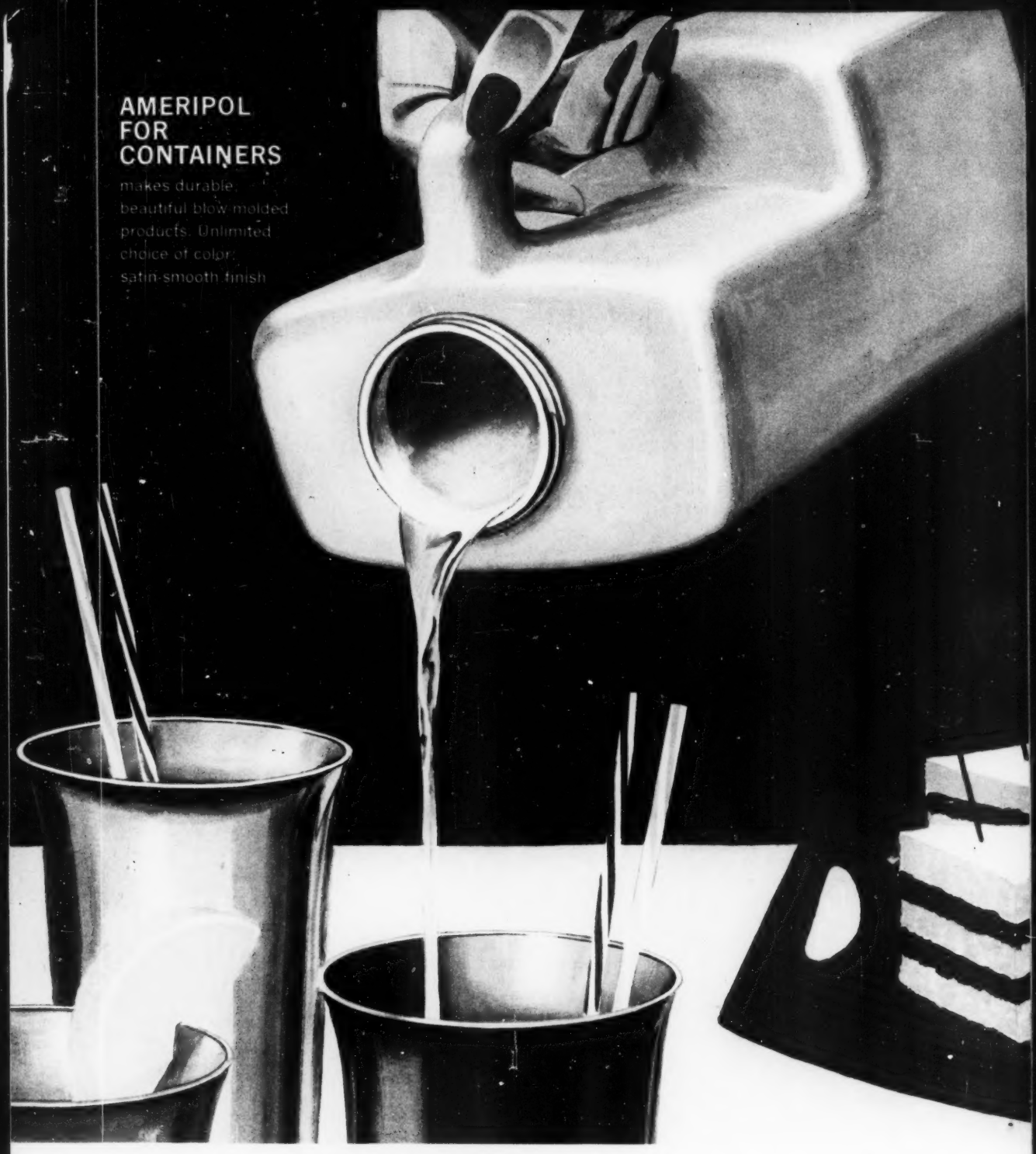
Yes, I am interested in cutting costs with HYTRONIC Cutting Machines. Please send brochure and Fact Sheets to:

NAME .....

FIRM .....

ADDRESS .....

U51-152



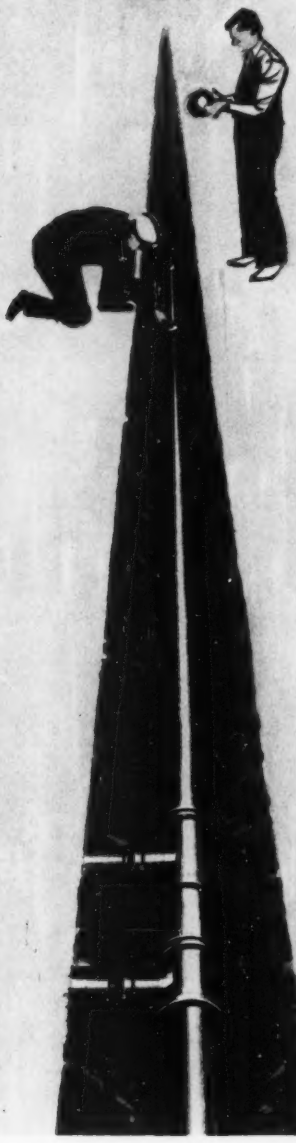
Look into **AMERIPOL**–the strong, strong

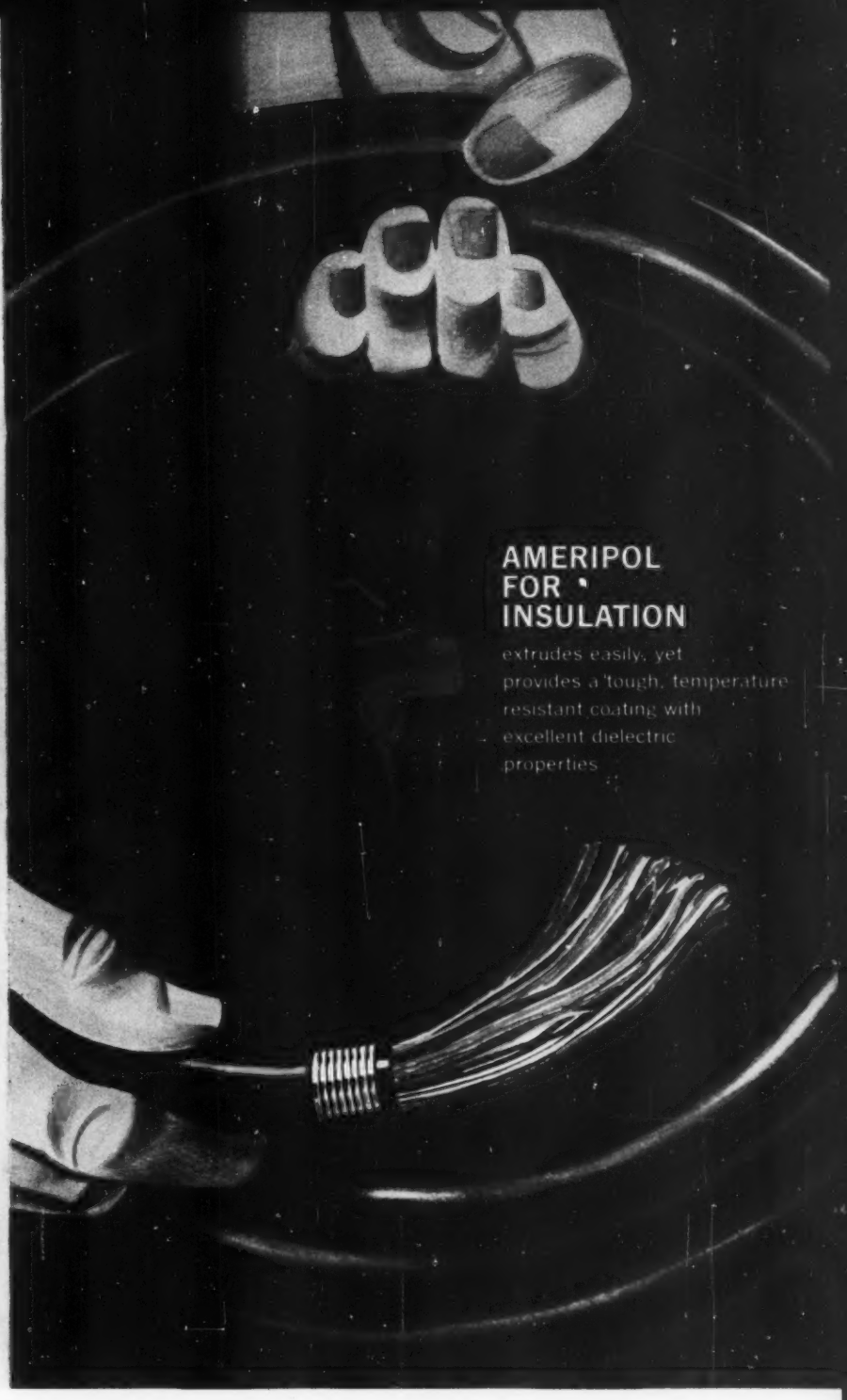
Ameripol is the new high-density polyethylene that offers exceptional physical properties – yet Goodrich-Gulf makes it so that it is easy to process. This means that with Ameripol you can substantially upgrade product quality without incurring higher production costs. No processing difficulties . . . use standard equipment. Finished products are easily machined, grooved, or punched. Investigate Ameripol for a *strong* polyethylene that is *easy* to process.

Call Goodrich-Gulf – Ameripol Technical Data File has the complete story on physical properties and specifications. And Goodrich-Gulf Technical Service engineers can help you with application. Write today for information.

AMERIPOL FOR PIPE

excellent impact strength and stress-crack resistance make a superior plastic pipe — yet easy to extrude on standard equipment





AMERIPOL FOR INSULATION

extrudes easily, yet provides a tough, temperature resistant coating with excellent dielectric properties

polyethylene that is easy, easy to process

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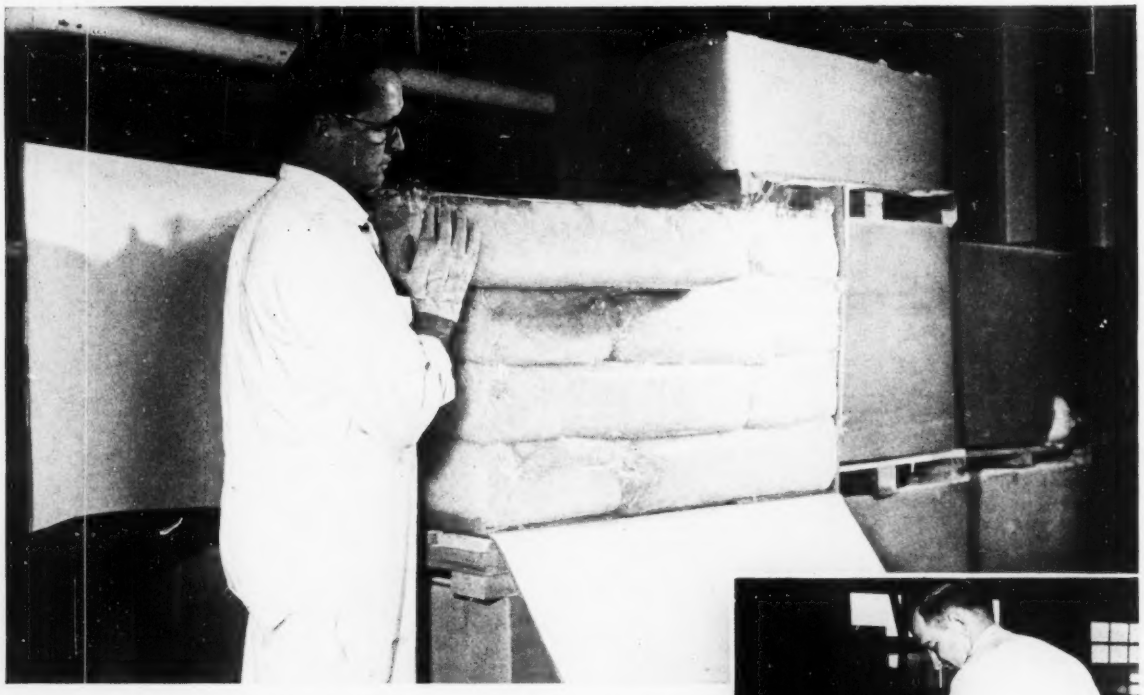
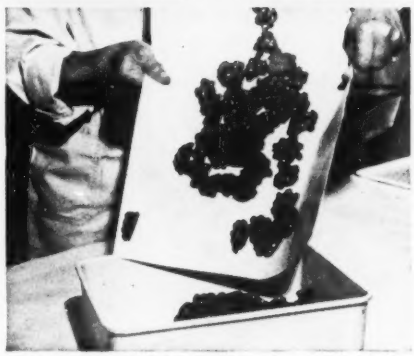
Goodrich-Gulf Chemicals, Inc.

THE ONE TO WATCH FOR NEW DEVELOPMENTS

SILICONE NEWS from Dow Corning

Silicones lighten the load





Prevent sticking, cut costs with Syl-off paper coatings

Syl-off® silicone coatings on paper and paperboard make it easier to unpack sticky products . . . simplify and speed handling. Even such tough stickers as raw rubber, asphalt, adhesives and plastic bases come away cleanly and quickly from all types of containers and process papers coated with Syl-off. Nonmigrating and noncontaminating, these anti-adhesive silicone coatings help processors remove all of the product . . . cutting waste to the bone . . . minimizing unloading time.

More Applications. Pressure-sensitive decals, labels, decorative trims and wallpapers peel free in a flash without tearing from Syl-off coated separators or backing papers. Use of food grade Syl-off coatings on food packaging papers is in compliance with provisions of the Food Additives Amendment of 1958.

Benefits All. Everyone who buys, ships or uses sticky products profits from Syl-off coated papers. Even your shipping costs are lower because Syl-off coatings actually weigh *less* than other release coatings.

For Information about properties and applications of Syl-off . . . and for a list of sources for paper products with Syl-off coatings, contact the Dow Corning office nearest you. Address Dept. 8020.

Your best source for information about silicone paper coatings, defoamers and anti-blocking agents is the Dow Corning office nearest you.

first in silicones

Dow Corning CORPORATION
MIDLAND, MICHIGAN

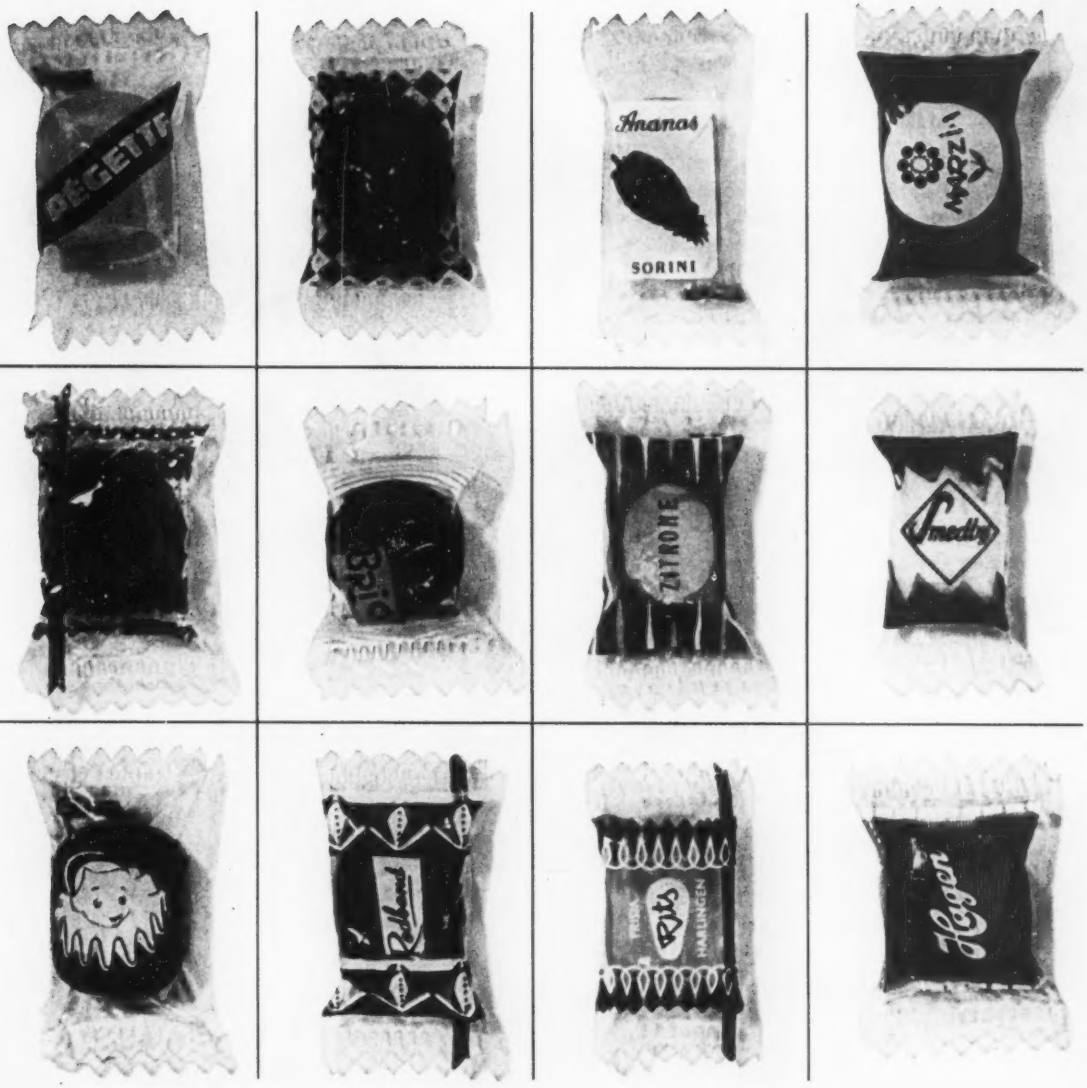
ATLANTA BOSTON CHICAGO CLEVELAND DALLAS LOS ANGELES NEW YORK WASHINGTON, D. C.

The Candywrap®-Pack

was shown for the first time last year and has already become the hallmark of many progressive confectionery manufacturers. The candy, in this "new" presentation, sealed in a tiny cellulose film bag, has an appetising and appealing appearance; opening it is child's play. The new style of wrap combined with multi-colour printing of the wrapper (photo electrically registered) offers a very attractive presentation. The "Candywrap" handles up to 500 pieces per minute. The Hamac-Hansella Machinery Corporation, Grand & Ruby Avenues, Palisades Park, N. J., will be pleased to let you have full details and place all our experience at your disposal.

Hamac-Hansella

Hamac-Hansella Maschinen GmbH, Düsseldorf, Western Germany



Print-Pak bags another good ea

Industry knows a good idea when it sees one. And many of industries' good product ideas are being bagged in Nibroc Print-Pak. ■ Nibroc Print-Pak is ideal for industrial use . . . is economical . . . strong . . . adapts to automatic handling . . . fills easily and closes securely. ■ Nibroc Print-Pak prints clean, colors are brighter — printers like it — because it is easy to handle and prints so well. Write today for samples and complete information to Dept. MP-8. Bring your product and customer together with Nibroc Print-Pak.

Another Quality Product of

BROWN COMPANY

General Sales Offices: 150 Causeway Street, Boston 14, Mass. • Mills: Berlin and Gorham, New Hampshire

Nibroc® Print-Pak offers an attractive, practical packaging method for the Geigy Chemical Corporation of Ardsley, New York. Each of the bright, heat-sealed, plastic-lined Kard-O-Paks, produced by American Bag and Paper Corporation of Philadelphia, are color-coded for easy product selection.

how bakers profit by wrapping bread in

Ward Baking Company is now wrapping nine varieties of bread in AviSun's Olefane film.

...the tough new polypropylene film

More and more bakers are switching to Olefane for these very good reasons:

PROFITABLE WRAPPING. Olefane has ideal stiffness and slip, constantly uniform thickness, plus a non-critical heat seal range. Machines smoothly, swiftly—with less rewraps. Costs up to *25% less* than other films.

PROFITABLE PROTECTION. Olefane keeps bread softer longer, cuts stale returns, because it has the best moisture barrier properties of any bread wrapping film. Resists tearing and abrasion. Doesn't become brittle with age—won't deteriorate in storage.

PROFITABLE SALES APPEAL. Olefane is sparkling, crystal clear. Neither too limp nor too stiff. Customers can see *and feel* the freshness of bread. Prints beautifully, too.

Olefane is being used in new packaging applications every day—from foods to lampshades. New production facilities, now under construction, will soon be ready to meet the growing demand for this versatile new packaging film. Send for Booklet AO-100 giving complete information on Olefane.

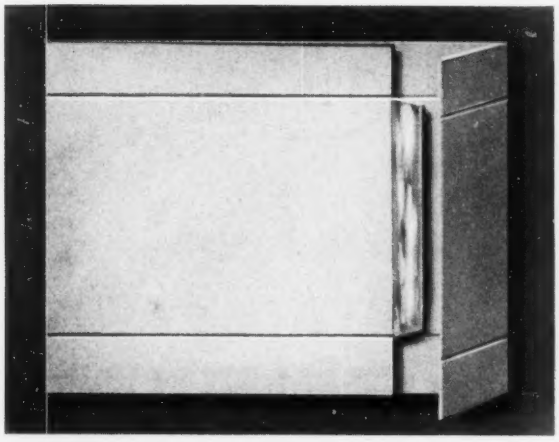
AVISUN CORPORATION
Dept. 555
1345 Chestnut St.
Philadelphia 7, Pa.

AVISUN

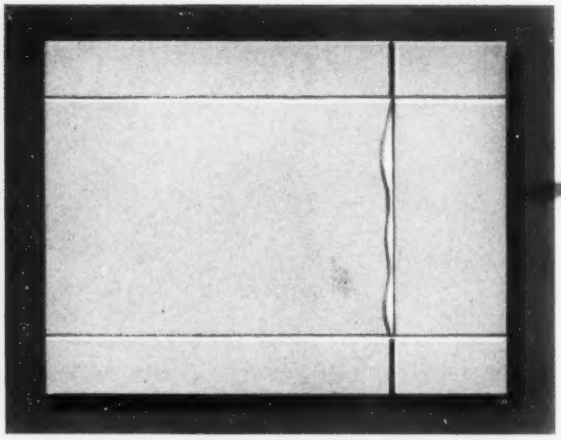
*a trademark of AviSun Corp.

SOLUTIONS TO PROBLEMS IN MAKING GLUE-LAP CARTONS

(and how the Arabol man helps you)



JOINTS THAT FAIL. This may be caused by the adhesive drying too quickly or too slowly. Improvements or changes in board composition or surface coating may be incompatible with existing adhesive formulation. When problems like these arise you probably need help. The solution might lie in adjusting the glue viscosity, or modifying the application procedure or time-temperature-pressure factors. Let your Arabol man give you the answer.



THE ADHESIVE SQUEEZES OUT. The forcing out of adhesive from the joint and spreading will cause production headaches. It may wipe off on machines or conveyers and result in foul-up; —in turn, contact with adjoining boxes may cause a jam-up. The problem may be caused by improper adhesive viscosity or application. The best way to find out is a hurry-up call to your Arabol man. He can usually help you.

ADHESIVE COST TOO HIGH? Protect your cost line as well as the adhesive line by relying on your Arabol man to offer you a quality adhesive, best suited to your needs. Many bonding agents are appearing on the market with truly fantastic performance. Their cost becomes fantastic, too, when used in volume to supply strength and permanence not really needed. You can save money and headaches by relying on your Arabol man to supply the best adhesive for an economical operation.

Send for these money savers

By foreseeing the adverse conditions your adhesives may encounter, you are in a position to correct them. Thus you will reduce "down-time" to a minimum and make better adhesive applications. We will be glad to send you a copy of our folder, *How to buy Adhesives*. The information it contains can help you save time, aggravation and money.

Four times a year, we also publish a lively newsletter called the *Arabol Adhesive Advisor*. It gives the latest news, views and ideas on adhesives.

Mail your request for the folder and future issues of the *Advisor*, on your letterhead, to Editor, Arabol Adhesive Advisor, 110 East 42nd St., N.Y. 17, N.Y.

ARABOL ADHESIVES

14 PLANTS AND WAREHOUSES TO SERVE YOU ON A LOCAL BASIS

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Riegel

Creative Climate for Tomorrow's Packaging

Riegel's Drapex® III is a tough new film for hard-to-skin-package objects that require deep draws around sharp corners. It gives reel, rod and tackle an appealingly "live" look in these new fishing sets by Sportsman's Accessories, Yonkers, N.Y. Strong durable "Drapex" III has excellent clarity and gloss . . . bonds perfectly to inexpensive board. It is a high-yield film that heats and forms rapidly.

Whether you need eye-stopping sales appeal like this . . . or quality protection for food products . . . or greater packaging machine efficiency . . . or just plain low cost . . . Riegel can help you.

Riegel versatility is shown on the following pages. Look them over, won't you?

. . . the new ideas come from

Riegel

RIEGEL PAPER CORPORATION, 260 MADISON AVENUE, NEW YORK 16, NEW YORK

Specialist in the packaging of foods, drugs, and soft goods

Flexible packaging . . . carton board . . . folding cartons . . . carton liners

Wey-rite,® Life Research's high protein diet, stays fresh and free-flowing in Riegel Pouchpak®

"Wey-rite," long established high protein food alternate is packaged in highly protective Riegel "Pouchpak"... a pouch-paper/poly/foil combination engineered for high-speed automatic filling equipment. Three-color printing by Riegel.

Many of the country's sales leaders turn regularly to "Pouchpak" for assured protection of flavor and quality. It's a whole family of high-performance laminated materials, tailor-made by Riegel to meet the specific needs of each product and each packaging machine.

We've a flair for thinking of *every* product as something special... and developing for it the one best packaging answer... be it pouch paper, glassine, foil, film, or combination... printed, coated or plain. Write for more information today... for the new ideas come from Riegel.

Flexible Packaging Division
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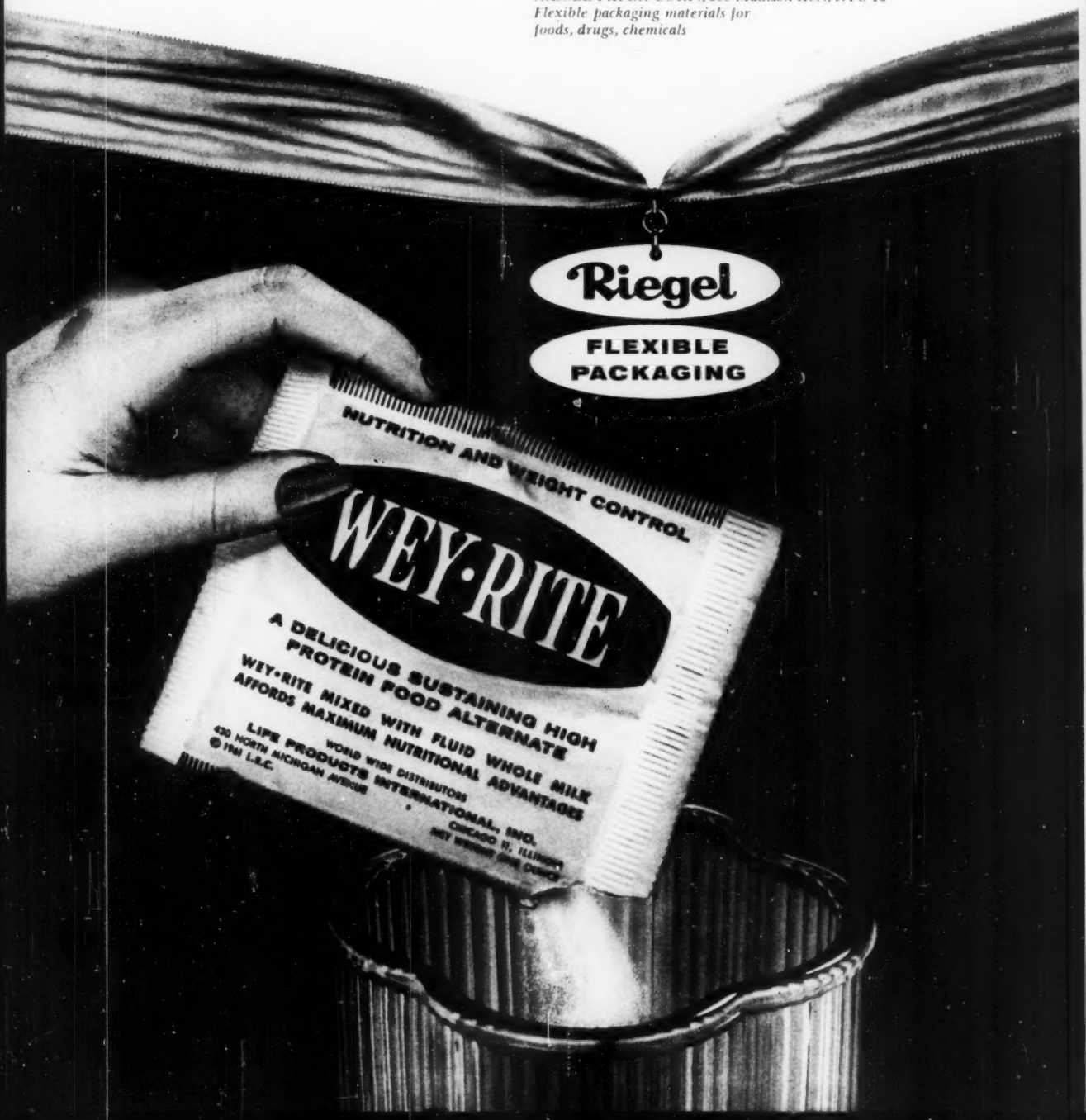
Flexible packaging materials for foods, drugs, chemicals



Otis Underwear: New impact for a familiar package ...created for E Z Mills by Lassiter

Revamped for stronger brand impact and easier self-selection ... Otis' bright new packages — designed and produced by Lassiter — carefully maintain the recognition value of established Otis' logotype.

Improving packages to attract new customers without losing the loyalty of old friends is a design problem that Lassiter has solved many times. As the leading specialist in soft-goods packaging, we understand both sales and production problems. We know how to create packages that will catch the shopper's eye, build identity, create new sales, and also fit your production set-up.

This kind of *practical* creative packaging can help you. Write or phone Lassiter today.

Lassiter Sales
RIEGEL PAPER CORP., 350 Fifth Ave., NYC 1
Designers and producers of film, foil, paper and paperboard packaging, inserts, riders, labels, bands and tags.

Flavored Bayer Aspirin for Children ...in bright, clean Riegel Foldcote

Standing four-square as a symbol of purity in the medicine cabinet, this white, neat, strong Sterling Drug package uses Riegel "Foldcote" carton board, letterpress printed in three colors by The Nevins Company, Clifton, N. J.

For noticeably stronger, brighter cartons . . . and extra eye-appeal . . . try Riegel's outstanding new full-bleached carton stock . . . "Foldcote." Super-white for color brilliance, super-smooth for high fidelity reproduction, super-strong for rugged, rigid packages that keep that clean look.

Your future, too, can be brighter with "Foldcote." Ask for samples and information. Ask too, about other Carolina solid bleached boards. Export inquiries invited. Call Riegel today . . . for the new ideas come from Riegel.

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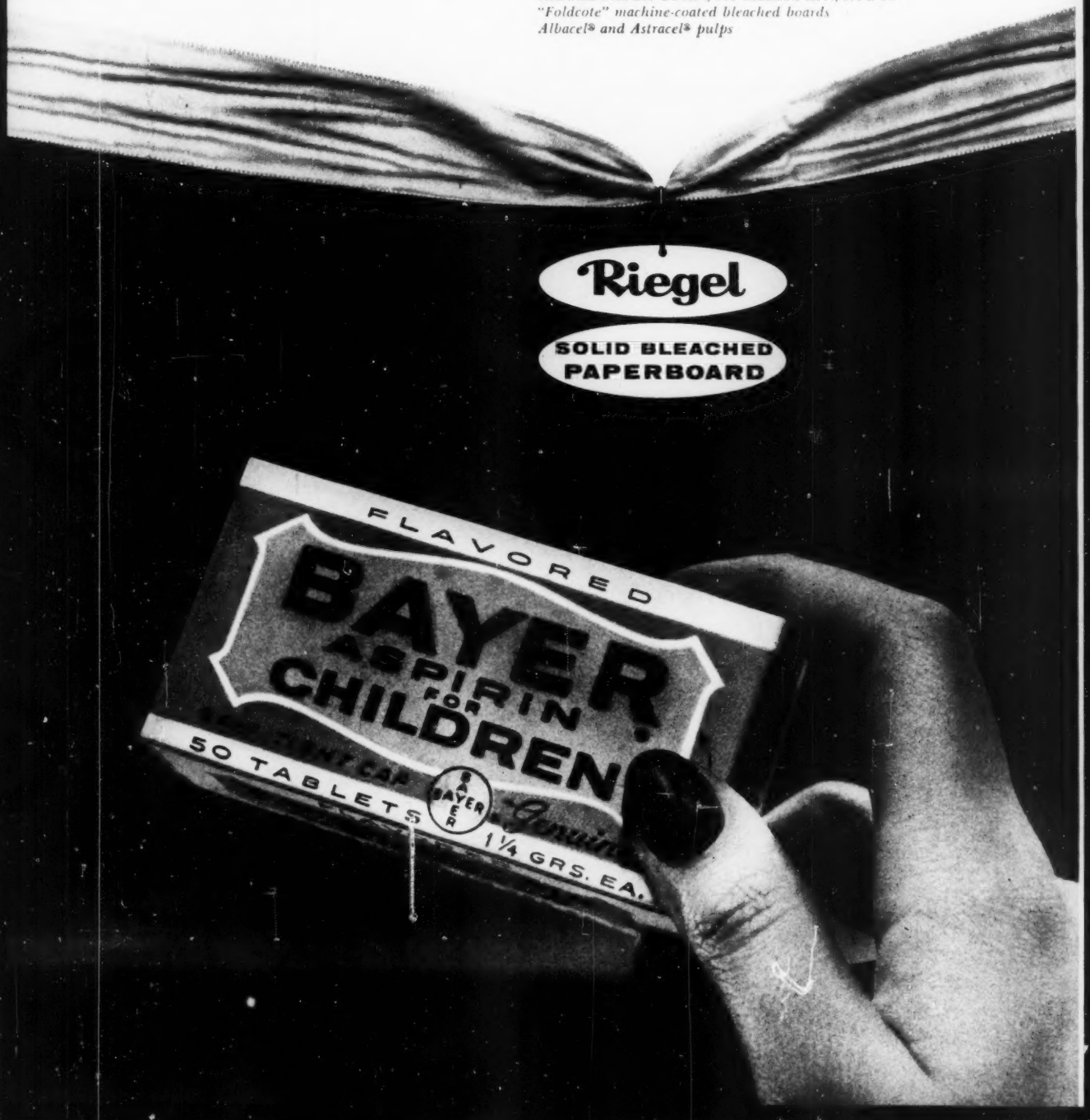
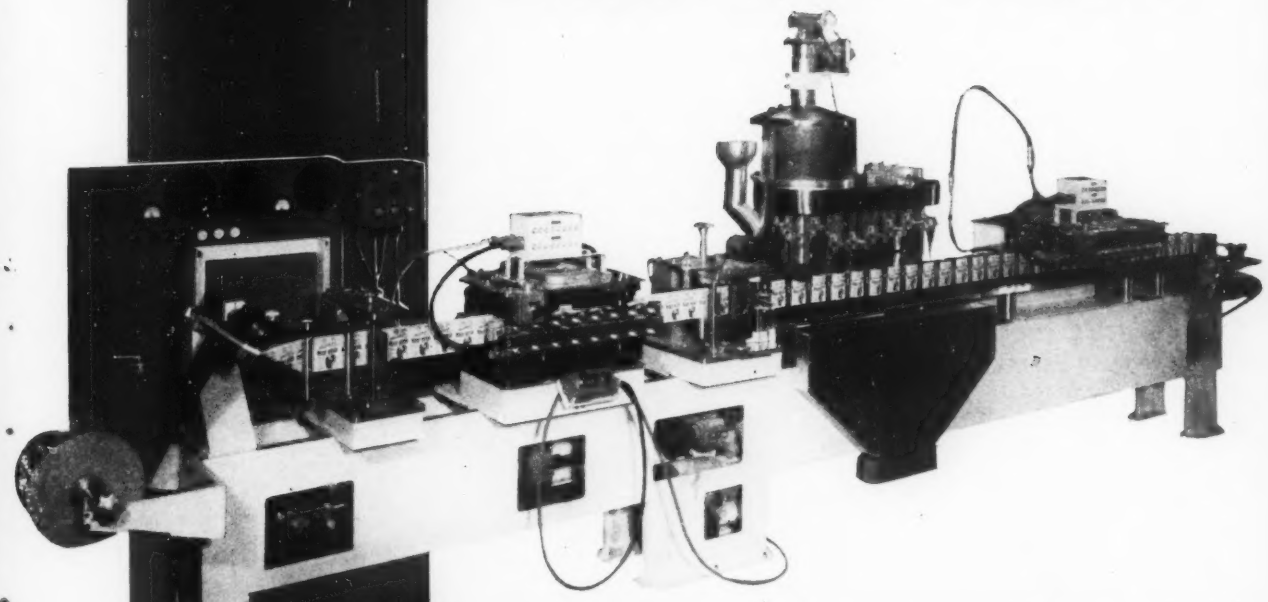
Albacel® and Astracel® pulps



...e BARTELT Tradition



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BARTELT CONTINUOUS MOTION PACKAGER

Speeds to 500 Packages Per Minute

Through continuous motion operation, Bartelt's proven principle of horizontal work flow now has been adapted for the production of up to 500 flexible pouch packages per minute.

This adaption is the new Bartelt Continuous Motion Packager. The quality package production expected of Bartelt equipment has been maintained with the bonus of VERY HIGH SPEED.

Keys to this unprecedented speed are revolutionary filling mechanisms and "traveling-beam" heat sealers. The heat sealers for both vertical and horizontal seams, composed of separate heating elements, follow the pouches, sealing 8 at a time with up to ½ second dwell time for lasting strength.

The machine can be adapted to the packaging of liquids, solids, and powders. Filling mechanisms are custom designed to best meet the requirements of the product for maximum efficiency and speed.

The use of single purpose mechanisms for forming, sealing, filling and closing makes for ease of maintenance and high operating efficiency.

Built in the traditionally rugged Bartelt style, this machine is fast, accurate, makes extra-strong seals, and will give you dependable service for years to come.

"Machinery for Creative Packaging"

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Subsidiary of Riegel Paper Corporation
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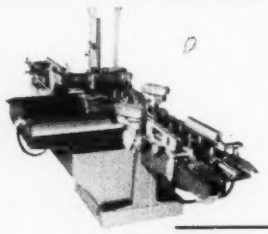
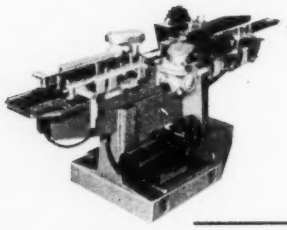
Now you can choose from 3 FMC Carton Handling Machines—to reduce high-cost hand operations and benefit from greater cartoning automation



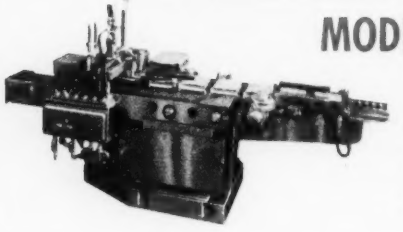
MODEL HU

The complete, portable, high-speed cartoner: automatically sets up, fills and closes end-open lock-type cartons, up to 350 cpm. For products such as prepared frozen dinners, entrees, individual 5" and 8" pies, and fruit tarts.



MODEL HCU

This is a carton closing unit only, equipped with FMC patented zipper plows for most efficient closing and locking of filled, lock-type cartons. Speeds to 60 cpm with two operators on such products as meat and fruit pies, entrees, bakery goods and foodstuffs in boilable pouches.



MODEL HU-HL

Provides automatic carton set-up, positions cartons for hand loading, closes and locks lock-type cartons. A smooth, continuous operation at speeds up to 60 cpm with one operator hand loading. Ideal to add a high degree of automation to existing lines packaging such products as pies, cakes, pizzas, prepared dinners and entrees.

WHATEVER your particular requirement, from a completely automated line to a closing operation only, you'll find a host of advantages in these FMC portable, high-speed machines. All models are constructed of gleaming stainless steel, aluminum and other rust-resisting materials, making them easy to clean and absolutely sanitary. Other important features include construction to NEMA 4 Electrical Code, variable speed drive, positive carton control, wide range of adjustability, positive zipper plow closing, anti-jam switches and famous FMC "No-Product, No-Carton" device (HU only). Savings through automation begins with FMC cartoning machinery. Write for full information, or call your nearest FMC representative.

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Kimpak now offers new and improved types—and most important, some lower in cost—to give you greater packaging economy. Send coupon today for FREE SAMPLE ROLL and full particulars.

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Please send sample roll of new 30" wide Kimpak interior packaging to try in my plant—at no obligation on my part.

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Look what's new in food packaging

NEW CONCEPT IN SAUCE BOTTLES. No "me too" here . . . this new sauce bottle cleanly breaks with tradition. Any user of barbecue sauce knows how handy it would be to dip right into the jar with spoon or basting brush. So this wide-mouth jar lets him. The ringed rib decorations look great and make the jar easy to hold. The broad stacker bottom permits stacking two or more high to fill out vital shelf space. This Armstrong-designed package filled a real need for Brooks Foods. What can we do for you?

Armstrong PACKAGING

WATCH ARMSTRONG CIRCLE THEATRE EVERY OTHER WEDNESDAY EVENING ON CBS-TV

Background for Packaging

Notes, quotes and comments. An editorial feature

A breakthrough of prime significance is the lowering of polypropylene film price to 1.81 cents per 1,000 sq. in. for a new 0.87-mil gauge. AviSun broke the mark with a reduction from 70 to 64 cents per pound. The new 0.87 gauge—considered adequate for most packaging uses of this high-strength film—yields 35,400 sq. in. per pound, highest yield of all plastics of comparable gauge, and the new price is below all transparent films except the lowest 1-mil polyethylene.

Another indication of the potential importance of polypropylene is Du Pont's announcement that it will immediately begin the marketing of the resin, drawing on supplies produced to its specifications by Hercules Powder Co. pending completion of Du Pont's own facilities. Du Pont itself is presently in pilot-plant production. Meanwhile, Rexall and W. R. Grace have announced that they will market polypropylene resin produced by others. Montecatini, the original Italian producer, will supply Grace.

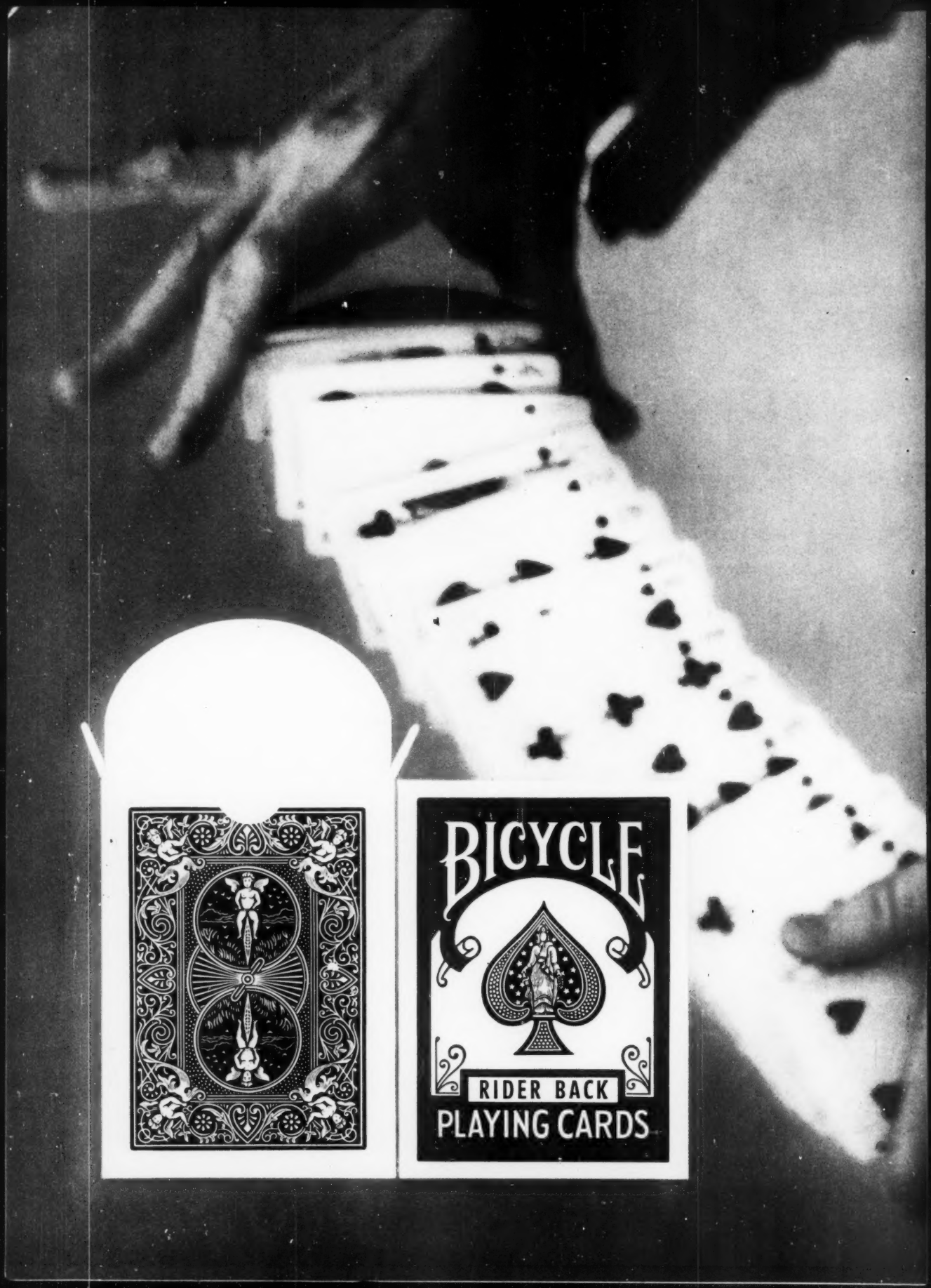
Compliance deadline looms for both soft-drink bottlers, who must list ingredients "in a conspicuous manner" on their containers by no later than June 15, 1962. Most carbonated-beverage bottlers already abide by the 20-year-old Food & Drug Administration regulation, but such giants as Coca-Cola and Pepsi-Cola are up against a perplexing and costly problem. Neither lists ingredients and each comes in decorative blown bottles that make it almost impossible to add ingredients data without damage to packaging esthetics built up at great cost over the years. One possible solution: print ingredients listing on top of the crown cap—but this is subject to F&DA approval and would mean some loss of brand identity in retail cooler cabinets.

Now that the dam has broken on polyethylene (also cellophane), others awaiting F&DA clearance are getting restless. At recent board meeting of the Can Mfrs. Institute, Dr. Roger Lueck, chairman of the CMI Food Additives Amendment Advisory Committee, reported "slow progress" in getting a definitive ruling on Food Additive Petition No. 125, covering can coatings. Even the request that has been made for confirmation of extension of effective date has been "officially delayed."

Note the trend toward wrap-around foil labels for one-trip beer and beverage bottles. The one-trip bottle, of course, is competing with the can rather than with returnable bottles. Bright, all-around lithography has been a selling point for cans and the all-around foil label is an attempt to give similar impact to bottles. Storz Beer and 7-Up beverage are using not only foil wrap-around labels on "glass-can" bottles, but these two products are also using foil-laminated six-pack cartons.

Foam shipping containers are being tested by the Army Engineer Research & Development Laboratories at Fort Belvoir, Va. The experimental container, made from expandable polystyrene beads, is formed in two halves in aluminum molds. The two halves, after packing, are fastened with either metal strapping or reinforced filament tape. The container is not only far lighter than a comparable fibreboard or wooden box, but is waterproof, rugged and can be re-used innumerable times. A typical container for a 42-lb. engine weighs only six pounds.

Ultralight tinplate has not reached its full economy. So far, production has been achieved by adapting existing mills to the [*Continued on page 42*]


BICYCLE
RIDER BACK
PLAYING CARDS

52 reasons for packaging with BRITE-PAK ENAMEL COAT

The United States Playing Card Co. uses Brite-Pak Enamel Coat bleached board to package its famous Bicycle cards because it gives them such a rich, clean-looking box. So do companies that sell cigarettes, foods, drugs, cosmetics and other consumer products that require customer shelf-appeal.

West Virginia's Enamel Coat is crisp and snowy white inside and out. It has brilliant printability. It gives the product get-up-and-go...and, it's economical.

Does your package have all the sales appeal it should? See how Brite-Pak Enamel Coat can help. Write Bleached Board Division, West Virginia Pulp and Paper Company, 230 Park Avenue, New York 17, New York.

West Virginia Pulp and Paper

Background for Packaging

Continued from page 39

double-reduction technique. Now, apparently convinced that the lightweight can material has a big market, steel makers are reported preparing new facilities specially adapted to high-speed, lower-cost production. First to announce such new facilities is National Steel Corp. *Note:* A leading can company says beer will definitely be marketed in the ultralight tin cans this year and that work is going forward on heat-processed foods.

Are housewives disenchanted with the supermarket? A national survey of more than 12,000 homemakers by Paramount Paper Products Co. discloses that more than half of them don't like shopping in supermarkets. *Complaints:* Takes too much time, more information needed on labels, service too impersonal, too wide a variety of products leads to confusion, price marks often illegible. *Suggestions for improvement:* Take telephone orders, provide delivery for a small fee. The net result seems to confirm other reports that the present generation is rebelling against the bargain-basement atmosphere that put the supermarkets in business 30 years ago.

Long-awaited clearance of polyethylene for food packaging, announced by F&DA and fully effective July 10, will accelerate the trend, already begun, toward polyethylene coating of paper milk containers and food cartons. Several big programs reportedly have been awaiting this signal. The effect on film use is expected to be less marked, since the film was already well established in food uses. The F&DA regulation—which, as predicted, establishes a specified "food grade" of polyethylene—is a triumph for concerted effort of 13 polyethylene producers working through a Committee on the Food Additive Status of Polyethylene (COFASP).

Mechanization with the aid of packaging has reached the greeting-card field. Standard Packaging Corp. has obtained exclusive rights to a new vending machine designed to dispense from a selection of 160 greeting cards for all occasions, each individually packaged, with envelope, in polyethylene. Tests are said to have shown enthusiastic reception in supermarkets. For Standard, this will be a fully integrated operation, with cards designed and printed by its Brown & Bigelow division on stock produced at the company's own paper mills and packaged in envelopes which are made by the company's Shelly division.

Aluminum-can hopes are spurred by figures from the Department of Commerce showing that consumption of aluminum in can making during the first quarter this year rose 83%, to 8,987 tons from 4,920 tons a year ago. For the same period, the figures show that use of tinplate for fruit and fruit juices decreased by 19,675 tons. Aluminum sources point out that one ton of aluminum replaces three tons of steel in can making. Meanwhile, aluminum citrus cans have been reduced 57 cents per thousand to $21.11 per thousand in Florida and ultralight tinplate for the same market has been cut $1.58 to $19.98 per thousand.

Publicity program is being launched by Modern Foods Council, Chicago, to build consumer acceptance for heat-in-pouch foods, which reportedly have been disappointing in consumer markets. A series of releases directed at homemakers will be distributed to newspapers, consumer magazines, Sunday supplements, and radio and TV stations. Modern Foods Council is a newly formed association of heat-in-pouch food processors and packaging materials and of packaging-machinery suppliers.

Oneida "Lure"

Big shoppers, too, go for bright, sparkling, attractive packaging. Oneida-produced packages have proved themselves time and again—in the store, on the shelf, in big league competition. "Lure"—that's the magnificent magic that Oneida knows how to build into flexible packaging. We'd like the opportunity of doing it for you—in the material that's exactly right for your product . . . printed brilliantly on Oneida's 6-color printing facilities, including oil ink letterpress, flexographic and rotogravure combination. Let us show you how Oneida can put *lure* into *your* packaging . . . and give you unfailing, dependable service from four strategic plants across the nation.

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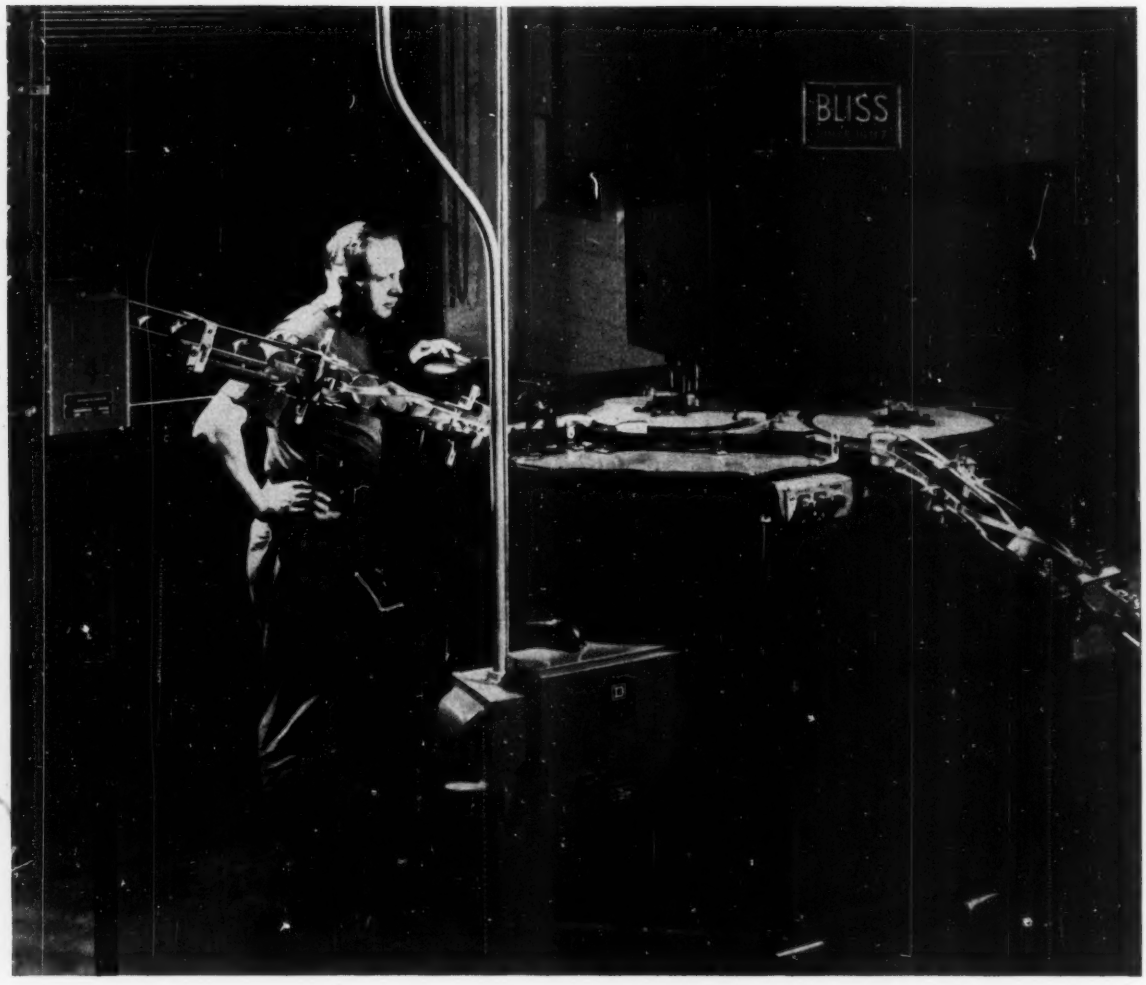

In 60 seconds...

THIS MACHINE DELIVERS 200 ALUMINUM CAN BODIES

Secret of the new drawn aluminum can line recently unveiled at Central States Can Corporation is this Bliss rotary redraw press. Multiple die stations rotating around a center post make possible extremely high output rates, without exceeding safe drawing speeds. The Bliss redraw press at Central States produces 200 drawn aluminum cans per minute, as equipped. However, production speeds as high as 400 per minute are perfectly practical by the simple expedient of doubling the number of heads, and provision has been made for this in the design of the machine. For more information on this remarkable new press . . . and other developments in can making equipment . . . write us today.

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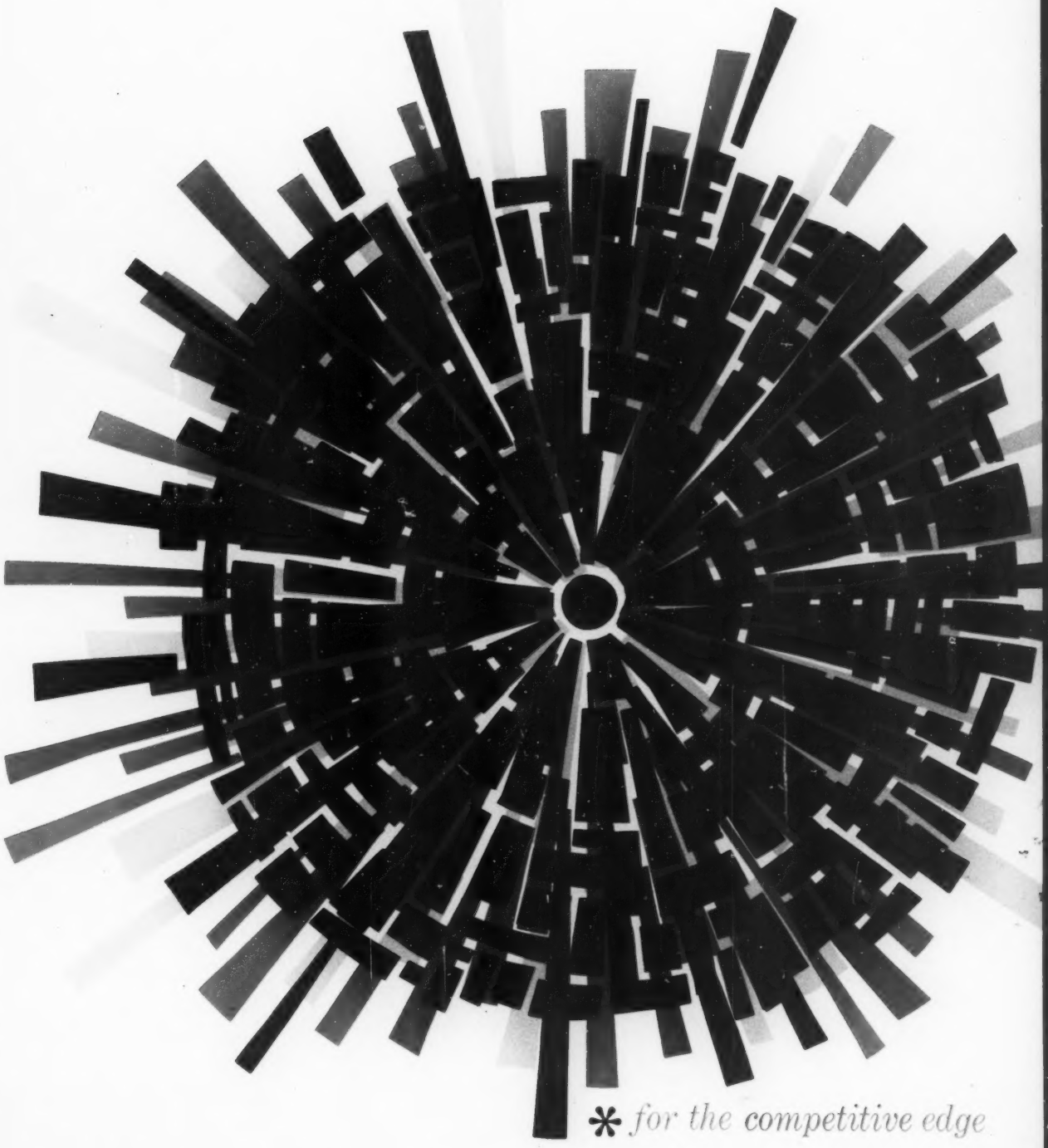
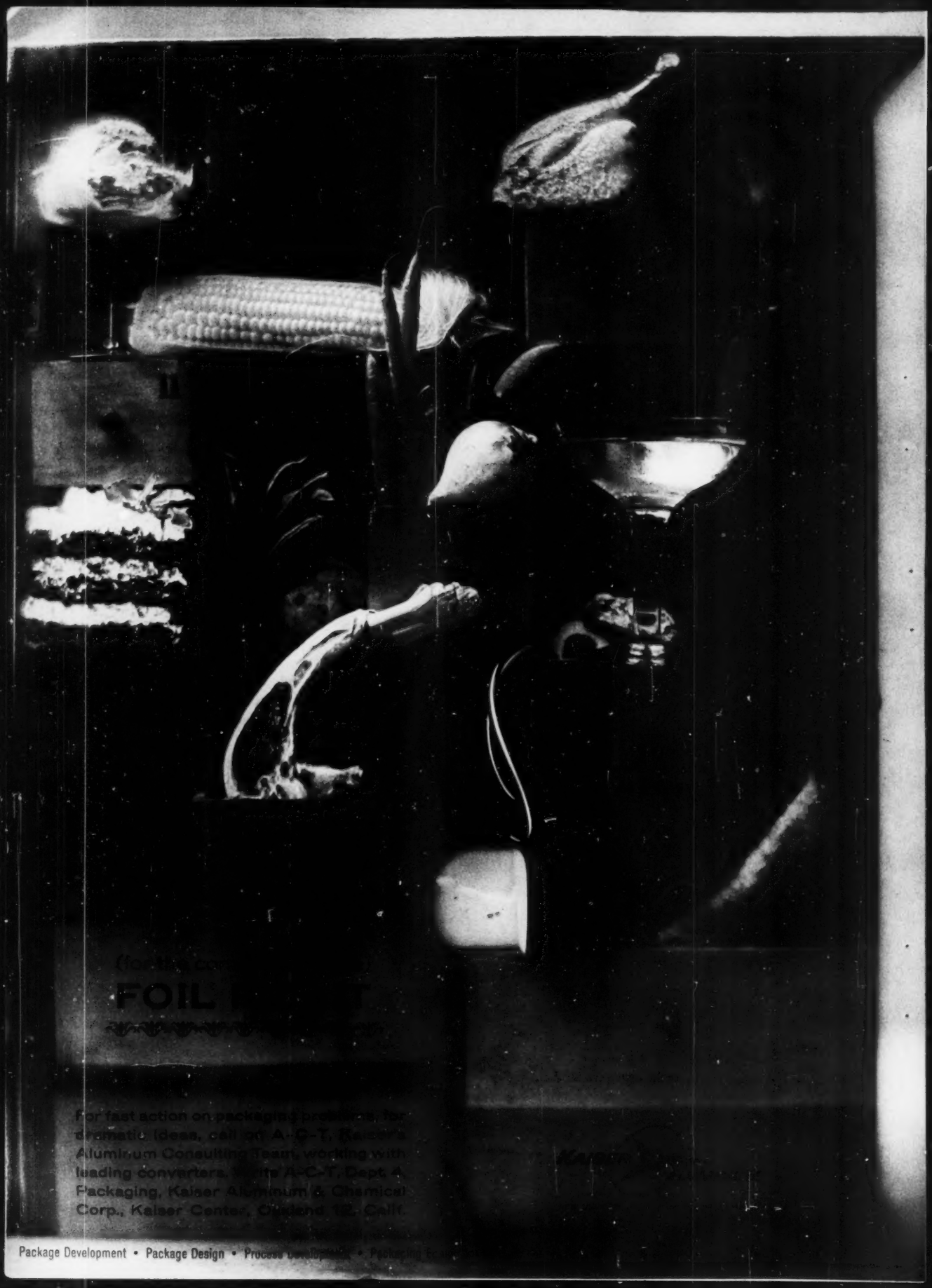

* for the competitive edge



For fast action on packaging problems, for dramatic ideas, call on A-C-T, Kaiser's Aluminum Consulting Team, working with leading converters. Write A-C-T, Dept. 4 Packaging, Kaiser Aluminum & Chemical Corp., Kaiser Center, Oakland 12, Calif.

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Let CREATIVE PACKAGING, INCORPORATED ease *your* procurement problems. Call on this *one source* for designing and producing a complete line of folding cartons, set-up paper boxes and inserts; fabricated and formed plastic containers; display containers, spiral wound tubes; molded, vacuum or pressure-formed cavities and blisters. Also a complete line of injection molded plastic boxes, dividers and inserts in stock sizes, shapes, and colors, or to custom specifications.

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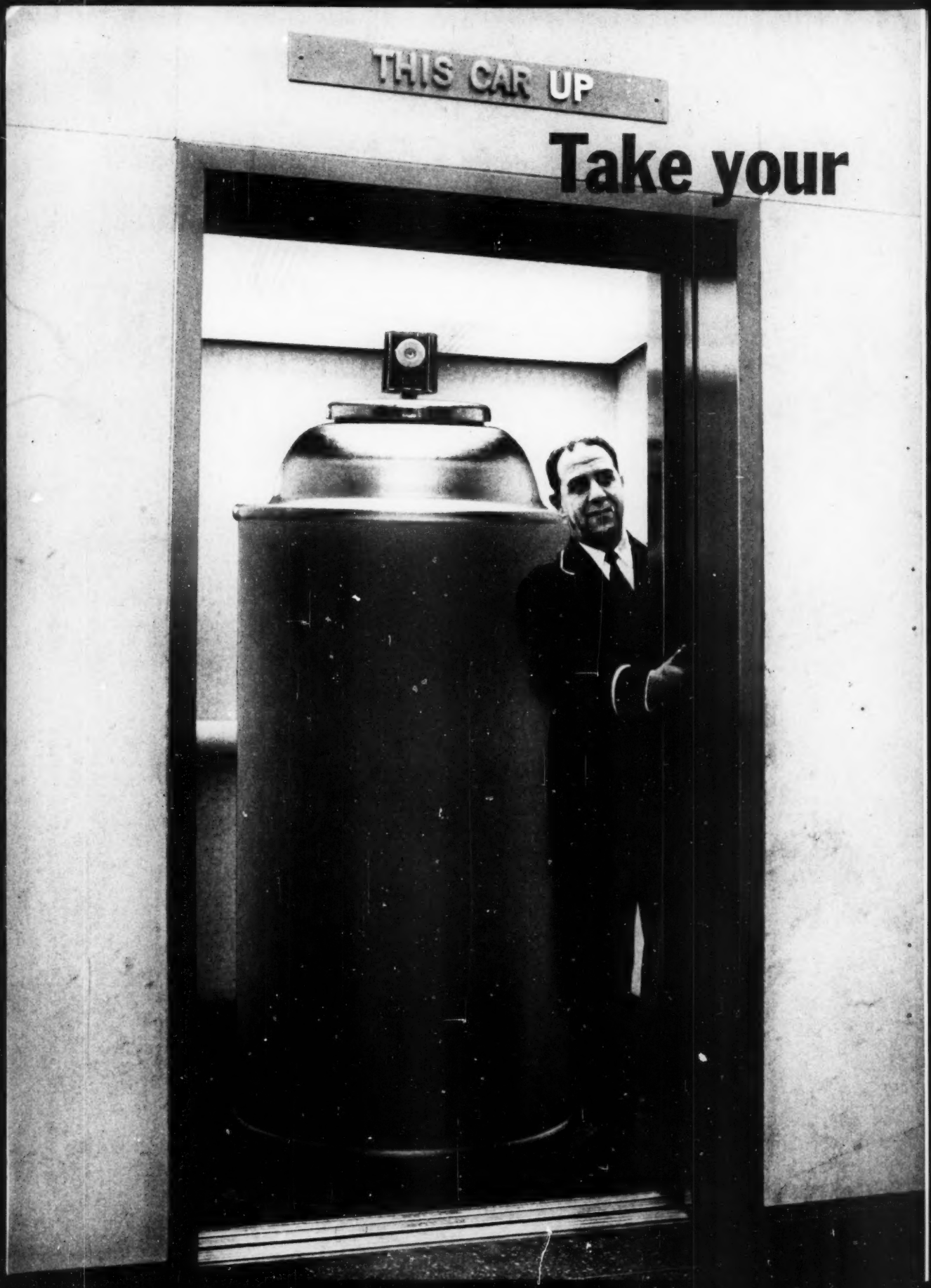
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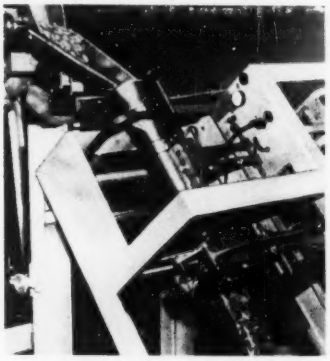
EQUIPMENT & MATERIALS

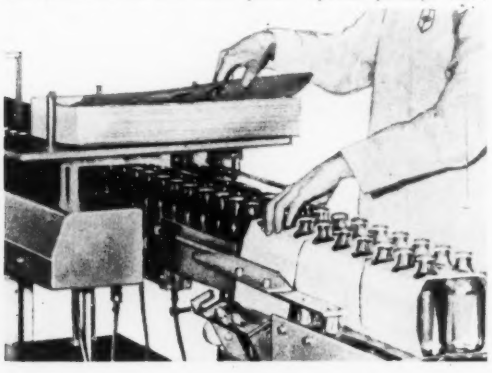
Crumb-free cookie and cracker packaging

Mercury Heat Sealing has introduced a variation of its Verti-Pak machine that automatically removes crumbs or "dust" while packaging candy, cookies or crackers in a flexible bag. The new model also is designed to prevent product fragmentation by providing a sliding movement through the bag-forming tube, rather than a sharp drop. As the product empties from a conveyor, it passes over a vibrating screen that removes any loose particles. It then completes its gliding movement into the bag that is formed around it. Models are available for a wide variety of films including cellophane, polyethylene, polypropylene, Pliofilm and polyethylene-cellophane combinations. The machine reportedly operates at speeds up to 50 packages per minute per forming tube. Models are available with electric eye for print registration and with date coder and hole punch mechanism for rack display bags. *Mercury Heat Sealing Equipment Co., 2601 N. Howard St., Philadelphia 34.*



New film and multipack machine

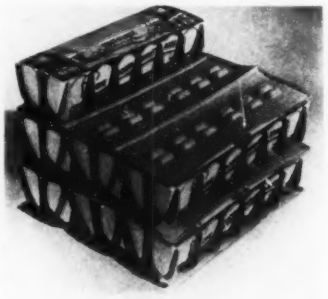
Wrap-around multiple packaging of cans or bottles at speeds up to 20 packs per minute reportedly can be accomplished by Continental Can's Jak-Et-Pak Compact 20 semi-automatic multipack machine. The new unit can be incorporated into any production line operating at speeds up to 120 bottles or cans per minute, the supplier notes. Placing the carton blank over the group of bottles or cans is the only manual operation involved. In operation, the carton and product move to a locking station after application of the blank. The folding and locking mechanisms then make a full cycle, locking the carton securely. At the completion of the locking cycle, the infeed mechanism selects another full product group and automatically moves it forward to begin another cycle. The machine is said to handle wrap-around cartons from $4^1/_4$ to $8^3/_4$ in. long and from $4^1/_4$ to 6 in. wide. It will wrap two-by-three, one-by-three, two-by-two and other packs. Special package sizes outside these limits are said to be available on special order. The supplier suggests the machine for no-return bottles or cans, market testing of consumer packs and distributor packaging of cans, bottles, jars and aerosols. Further details are available from the Folding Carton Division.



Continental's Flexible Packaging Div. has introduced a 3-mil self-adhering polyethylene skin-packaging film. The new unsupported film is said to be specially formulated and processed to provide excellent adhesion to uncoated board, proper drawdown and forming characteristics, strength, gloss and transparency. The film bonds to board by adhering to the individual paper fibres. This type of bond is stronger than a bond of film to coating or coating to fibre, the supplier claims. Continental notes that it has been tested successfully on plain chipboard, white patent-lined chipboard, white lined kraft, patent-coated newsback, wood vat-lined newsback and double-faced corrugated board. As a general rule, the supplier notes, the less expensive the board, the better the film works because the less costly board is more porous. Material cost savings of 50% and more are cited. For further details, contact *Continental Can Co., 100 E. 42 St., New York 17.*

Separator flat for egg cartons

A means of protecting eggs in transit by preventing the cartons from shifting inside their shipping containers is presently available from Packaging Corp. of America. The company's Egg Packaging Div. is supplying the new Mapes Carton Separator Flat, which is said to be the first in the industry that will fit every brand of two-by-six boxboard folding cartons. It is also reported to be the first to give individual carton protection. The three-carton flat, made of molded pulp, features a retaining ridge on all four sides and a retaining ridge between each carton to prevent sliding and shifting. The retaining ridge also acts as an emergency reservoir in the event of chance breakage of eggs during shipping or handling. Additional information is available from the supplier. *Packaging Corp. of America, Evanston, Ill.*



New high-density polyethylene resins

Eight high-density polyethylene resins for injection molding, blow molding and extrusion have been developed by Dow. Of special interest to packagers are resins R800, R211 and R401. R800 is recommended for film overwrap and tape backing. R211—a copolymer—is designed for blow-molding applications and is said to be characterized by good rigidity and outstanding resistance to stress cracking. It is suitable for detergent bottles and similar applications. R401—an ethylene homopolymer—is said to have excellent rigidity and impact strength. It is recommended by the supplier for such uses as bleach bottles, where superior modulus and impact strength are needed but stress-crack resistance is not a prime requisite. Both R211 and R401 are reported to provide excellent fabrication performance, chemical resistance, impermeability to liquids and gases and a high surface gloss. They are also claimed to have good

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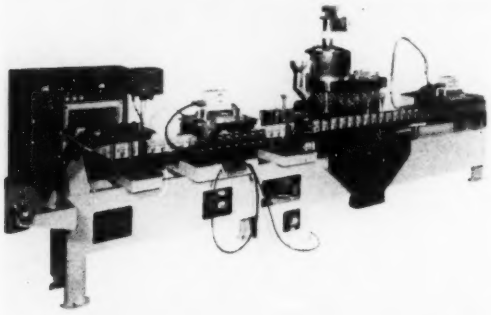
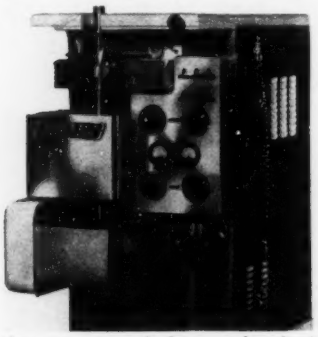
melt strength which results in less parison drawdown and, therefore, better part uniformity. Resins R200, R210 and R300 are general-purpose resins suited for both blow molding and extrusion applications. R200 and R300 ethylene homopolymers—reportedly provide excellent rigidity and impact strength and are recommended for rigid containers and fabrication into sheet and monofilaments. R210 is a copolymer which is cited for good stress-crack resistance and impact strength. Details are offered by *The Dow Chemical Co., Midland, Mich.*

Horizontal and vertical pouch-packers

Significant increases in production rate are claimed by Bartelt for its new horizontal and vertical pouch packers. The horizontal, continuous-motion packager (upper photo) is said to be capable of producing pouches at speeds of



300 per minute. This represents a 400% increase in rate for this type of packaging, the supplier notes. Reported to be responsible for the high speed are two devices—traveling-beam heat sealers and a duck-bill filling mechanism. The heat sealers for both vertical and horizontal seams, composed of separate heating elements on an orbital chain, follow the pouches and seal 10 at a stroke with up to 0.5 sec. of dwell. The filling mechanism travels in an orbital path around the rear of the machine—where the "bills" are filled from an auger feeder—to the front—where they are cammed down and unloaded. The continuous-motion action of the equipment is reported to give a reduction of product inertia following filling, contributing to high-speed efficiency. The vertical pouch packer (lower photo) uses what is claimed to be a unique vacuum-sleeve device to push the film through the filling and sealing section, thus removing strain from the film during the heat-sealing operation. The vacuum device is said to enable production at speeds of up to 100 per minute, virtually double that of previous units. Fast package size changes—15 min. or less—can be made by replacing the web-forming collar and vacuum web-feed head, the supplier notes. *Bartelt Engineering Co., Rockford, Ill.*



New high-gloss waxed bags

Under the trade name "Sparkell," Arkell & Smiths has introduced a new line of high-gloss waxed bags for potato chips, snacks and other food items. The bag has an outer layer of clay-coated white kraft sheet and an inner layer of waxed, bleached glassine. The outer kraft layer has a heavy coating of a new wax formula, the supplier notes. The bag is said to provide exceptionally good freshness-preserving qualities and is adaptable to flexographic printing. A special machine, designed to A&S specifications, is used to apply the finish. *Arkell & Smiths, Hudson Falls, N. Y.*

High-density extrusion-coating resin

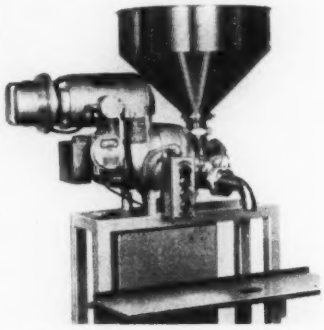
A new high-density polyethylene resin, tailored for extrusion coating and designated Marlex TR-515, has been introduced by Phillips Chemical. The company reports that the availability of this tough barrier resin, with reported coating rates in excess of 600 ft. per minute on standard equipment and coatings of less than 5 lbs. per ream, will increase the use of high-density polyethylene in the extrusion-coating field. The material is said to have a high resistance to scuff, temperature extremes, moisture and grease. Initial markets are expected by the supplier to be coatings for multiwall bags and pouch papers, coated films and foil where low WVTR and greaseproofness are necessary, and coatings for such paperboard products as frozen-food packages, folding boxes and corrugated board. *Phillips Chemical Co., Bartlesville, Okla.*

Automatic five-pack cigar cartoner

Thiele has introduced a five-pack cigar cartoner that automatically packs cigars at a reported rate of 25 five-packs per minute. The machine is designed for use in conjunction with a cigar making machine turning out 125 cigars a minute. It reportedly grips the cigars firmly enough to keep the bands facing up, but gently enough to avoid damage. The multipack cartons—fed into the machine flat—are opened, squared off and held in readiness. Then a group of five cigars is squeezed together slightly and pressed into the carton. The carton is then sealed and conveyed to the overwrapping machine. *Thiele Packaging Machinery Co., 1000 Berry Ave., St. Paul 14.*

Electronically controlled bulk filler

Anderson Bros. has introduced a new electronically controlled bulk filler for cottage cheese and similar dairy products. Known as Model 527, the filler is said to accurately fill 2- to 60-lb. containers without touching the product. The unit shown in the photograph is the hopper model; but the filling head can also be fed directly from an adjoining vat or by gravity drop from a second floor. If the vat must be located some distance from the filler, a sanitary pump can be used to deliver the product to the unit. All components that touch the product are reported to be machined from stainless steel or nickel silver. The metering counter is electronically controlled and product cut-off at the nozzle is claimed to be sharp and clean. The unit is mounted on an integral pedestal-type stand with leveling legs. *Anderson Bros. Mfg. Co., Rockford, Ill.*



Economical one-way multipacking

Weyerhaeuser has introduced a one-way cartoning program that is said to be economical and efficient and also is claimed to make it possible for bottlers to enter the "one-way" market without a big investment in costs. The program consists of the Commando cartoning machine—said to meet the low-cost production needs of medium-speed

top drawer However big or small you are, whatever you pack, you're top drawer here at Harcord. We're dedicated to producing the finest canisters at the lowest prices in the market place. But beyond that, we aim to pack along the kind of service that makes us a pleasure to do business with. Our front office is always open, our telephones at your service. Whatever your problem, whatever your quantity, whatever your budget, we're ready to pitch in with instantaneous attention, modern facilities and whatever else constitutes optimum service for you.

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BONNET TOP MAHOGANY HIGHBOY, MADE IN NEW YORK, CIRCA 1760. COURTESY ISRAEL SACK, INC.

bottlers plus a new and reportedly low-cost wrap-around carton carrier. Designed for continuous-motion straight-line cartoning, the machine is said to wrap almost any size of bottle or can in any multiple units required. The basic equipment is designed to handle the standard six-pack, but conversion to handle other units is claimed to be easily accomplished. The unit requires 20 sq. ft. of floor space and can be operated by one semi-skilled employee, the supplier notes. The solid kraft wrap-around carton carriers are reported to have positive locks on top to hold the bottles or cans firmly in place, and solid bottoms—free of glue or locks—to prevent bottle fall-out. The kraft is white coated on the outside and said to be suitable for fine color printing. Die-cut holes are provided for easy carrying. *Weyerhaeuser Co., Boxboard & Folding Carton Div., 919 N. Michigan Ave., Chicago 11.*

New bacon package design

A new bacon package design known as "Show Pak" has been developed by Du Pont's Film Dept. The new unit has a construction similar to other overwrapped bacon packages which enables it to be handled on standard overwrapping machinery. However, the new package features a back flap that folds out and over the front of the pack when the cellophane overwrap is removed at home. The flap pro-

vides a neat, protective cover which locks on top of the carton. Thus the package couples the production and merchandising advantages of a complete cellophane overwrap with the convenience of a carton that stores well in the home refrigerator, Du Pont notes. The company claims that 50% more of the bacon is visible in the new carton than in conventional window cartons. Material costs—carton plus overwrap—are reported to be as much as 10% lower than the cost of window cartons. The company is licensing the rights to manufacture the carton to any interested company. *E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del.*

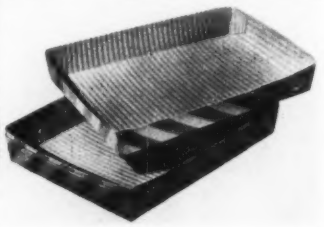
New imprinting equipment

Metal and plastic can caps can now be printed with product and use information by Markem's Model 64AC cylindrical printer. The machine prints completely around the circumference of the caps. It reportedly handles cap diameters between $1^{3}/_{4}$ and $4^{1}/_{2}$ in. and can print caps separately or assembled on cans. It is said to give uniform location of the imprints and to be easily adjusted for varying cap and can sizes.

Markem has also introduced a box-marking machine, Model 152A, for imprinting the lid ends of filled or empty assembled boxes. The company reports that as many as 65 boxes per minute can be printed on the new machine, which automatically controls registration and alignment. The new model will print boxes from 6 to 8 in. long, 4 to $8^{1}/_{4}$ in. wide and $^{3}/_{8}$ to $1^{5}/_{8}$ in. thick, the supplier notes. Maximum imprint area is $1^{5}/_{8}$ by $6^{3}/_{4}$ in. The unit comes equipped with a counter. A top-loading stacker and a conveyor stacker reportedly make it easy to achieve maximum production. *Markem Machine Co., Keene 11, N. H.*

Corrugated baked-goods pan

A new corrugated, glued bake-in pan which eliminates the need for a separate oven pan and sales tray is now available from Sherman Paper Products. The oven-ready "Corro-Pan" features built-in corrugations that are claimed to provide an even bottom bake. Designed for use by supermarkets and other volume bakers, the new pans are suggested for brown-and-serve rolls, sweet rolls, coffee cakes and yeast-raised doughs. They are constructed with rigid, tapered sides for compact nesting and easy loading. Reportedly, no set-up time is required and fast overwrapping and sealing are possible. The smooth, white outside surface is available either in stock designs or with custom printing. The inside corrugated parchment liner is release treated for quick separation of the baked goods. The new pans are said to be priced below comparable foil pans. *Sherman Paper Products Co., Newton, Mass.*

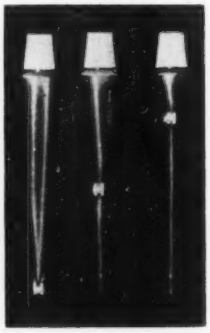


Resin for rigid, thin-wall containers

Hercules Powder has made commercially available a new series of Hi-fax high-density polyethylene resins that are said to make possible the low-cost production of sturdy 1-gal. containers with rigid, thin walls. With a density of 0.962 (compared with the 0.945 density of regular Hi-fax), these new resins, supplied in three different melt indices, are also said to have a superior surface gloss and sharper light transmission. The new resins reportedly have a higher density and greater stiffness than comparable materials. The rigidity of the plastic is claimed to allow the molder to cut material costs substantially by reducing the thickness of the container wall without sacrificing strength. Gallon bottles for bleach and other household products are expected to be among the first applications of the new resins. The price of the resin has been set at 32 cents per pound. Contact the supplier for additional information. *Hercules Powder Co., Wilmington 99, Del.*

Sliding clasp for plastic tubes

A novel sliding clasp for plastic tubes which keeps the used portion of the tube in a collapsed state—thus eliminating flow-back and air-bubble accumulation—is offered by Samida Sales Co. Made of high-impact polystyrene and available in any color, the clasp comes in sizes to fit all standard vinyl, polypropylene or polyethylene tubes. The clasp is injection molded in two parts and reportedly can be attached by machine at the same speeds as the packager's form-fill-seal equipment. It is small enough so that no changes in the amount of net contents or in the size of the tube or carton are necessary, the supplier notes. At the point of use, the consumer merely squeezes the tube for the desired amount of the contents, slides the clasp upward to force out the air and then replaces the cap. Further information is available from *Samida Sales Co., Inc., P.O. Box 194, Chicago 17.*



Six-up pouch-packaging machine

Converters Service Co. is offering a machine built especially for forming, filling and sealing polyethylene-coated cellophane pouch packages for granular products. It makes

[*Continued on page 166*]

Announcing another new line
of modern-day packaging materials
by CHASE

a versatile variety of

EXTRUSION COATINGS & LAMINATES

kraft/poly	pouch papers/poly	saran/cello/poly	fabric/poly
paper/poly/foil/poly	foil/poly/paper/poly	cello/poly/foil/poly	burlap/poly
paper/poly/paper	foil/poly/paper	cello/poly/cello	cotton/poly
paper/foil/poly	cellophane/poly	acetate/poly	sulphite/poly

Extrusion Coatings and Laminates add even greater diversity to Chase's established line of nationally known packaging materials. And still other new combinations, with an almost limitless variety of applications, are now being analyzed and developed in Chase's extensive packaging-research laboratories. The objective? To meet the exact requirements of every customer.

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Is yours just as clear? Then test for strength. Or perhaps yours is just as strong. But is it as clear? Sure, you can get poly with just one of these properties... but Du Pont's 2 in 1 polyethylene bag film combines *both* crystal clarity and toughness. Compare. You'll see why so many leading packagers like Cannon Mills are now using Du Pont's 2 in 1 polyethylene. Call your Authorized Converter or Du Pont Representative. E. I. du Pont de Nemours & Co. (Inc.), Film Dept., Wilmington 98, Delaware.

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Great Protection

(for people concerned with sales)

Products packaged in Alcoa® Wrap Aluminum Foil have two major advantages. One, they're getting the last word in protection. Two, they fix the shopper's eye right where you want it—on your product. Alcoa Wrap Aluminum Foil handles both assignments equally well.

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Alcoa Wrap Aluminum Packaging is doing wonderful things for countless numbers of consumer products. It's making them look smarter, keep longer, sell faster. It can do the same things for you. So talk to Alcoa, the company that will put its packaging experience, its research facilities and its process development resources to work for you. Alcoa . . . Aluminum Company of America.

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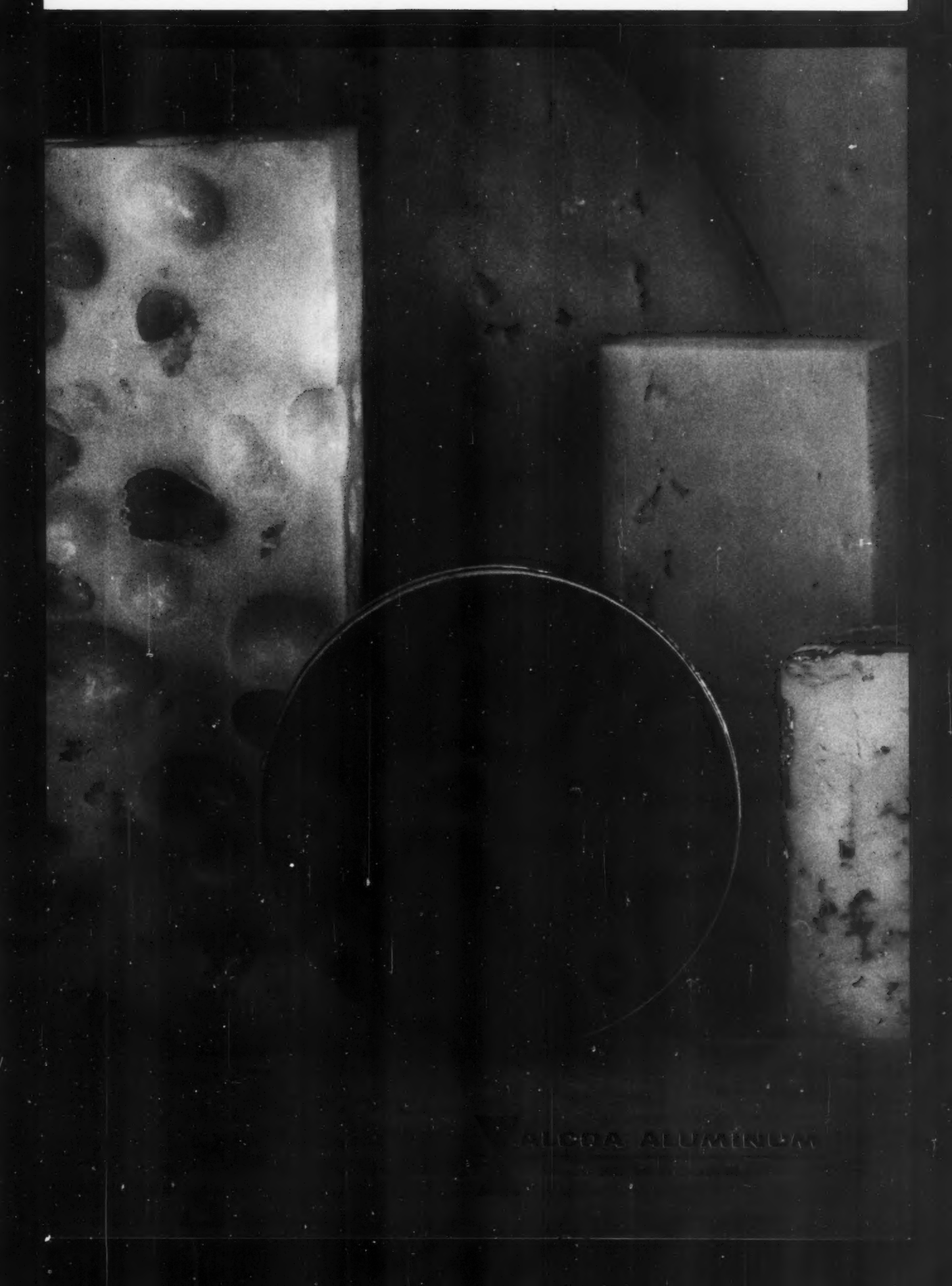
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CAMERON 680 · WORLD'S LARGEST DUPLEX WINDER
A BASIC DESIGN FOR PAPER, PLASTIC FILM AND FOIL

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(IN LARGER DIAMETERS THAN EVER BEFORE)

In operation at the Nicolet mill (West De Pere, Wis.) for more than a year, the 680 has proved itself on glassines, greaseproofs and supercalendered sulphites over a range from 20 lb. to 70 lb. basis weight. The 680 has delivered 36″ diameter rolls of superb *running* quality, holding more than 13¾ miles of paper, with plenty of capacity still in reserve to meet future needs (50″ rewind diameter, 3600 fpm winding speed).

The new, large diameter roll stands up well in handling, storage and shipping. Trouble-free feeding through a long dependable run minimizes downtime due to web breaks and roll changes. It keeps the paper *fresh* and *alive* for better end results. That's why we call it The New Roll!

Like other smaller Cameron duplex systems the big 680 uses combination surface-and-center winding, applying the differential principle to allow each roll to set its own winding speed, thus compensating automatically for variations in caliper.

A variable speed hydraulic main drive, with individual speed control on each of the hydraulic rewind drives, separates control of winding speed and roll density on each set of rewinding rolls. Adjustable, pneumatically actuated, tapered automatic counterbalancing controls nip pressure separately on each set of rolls.

Among other 680 features contributing to roll quality are: the Cameron F-2 unwind and continuous duty brake; the Cameron 950 dancer roll tension system; and the hydraulic-pneumatic edge guide. All control elements are integrated, and adjustable to characteristics of the material, quality of the parent rolls, and intended use of the finished rolls.

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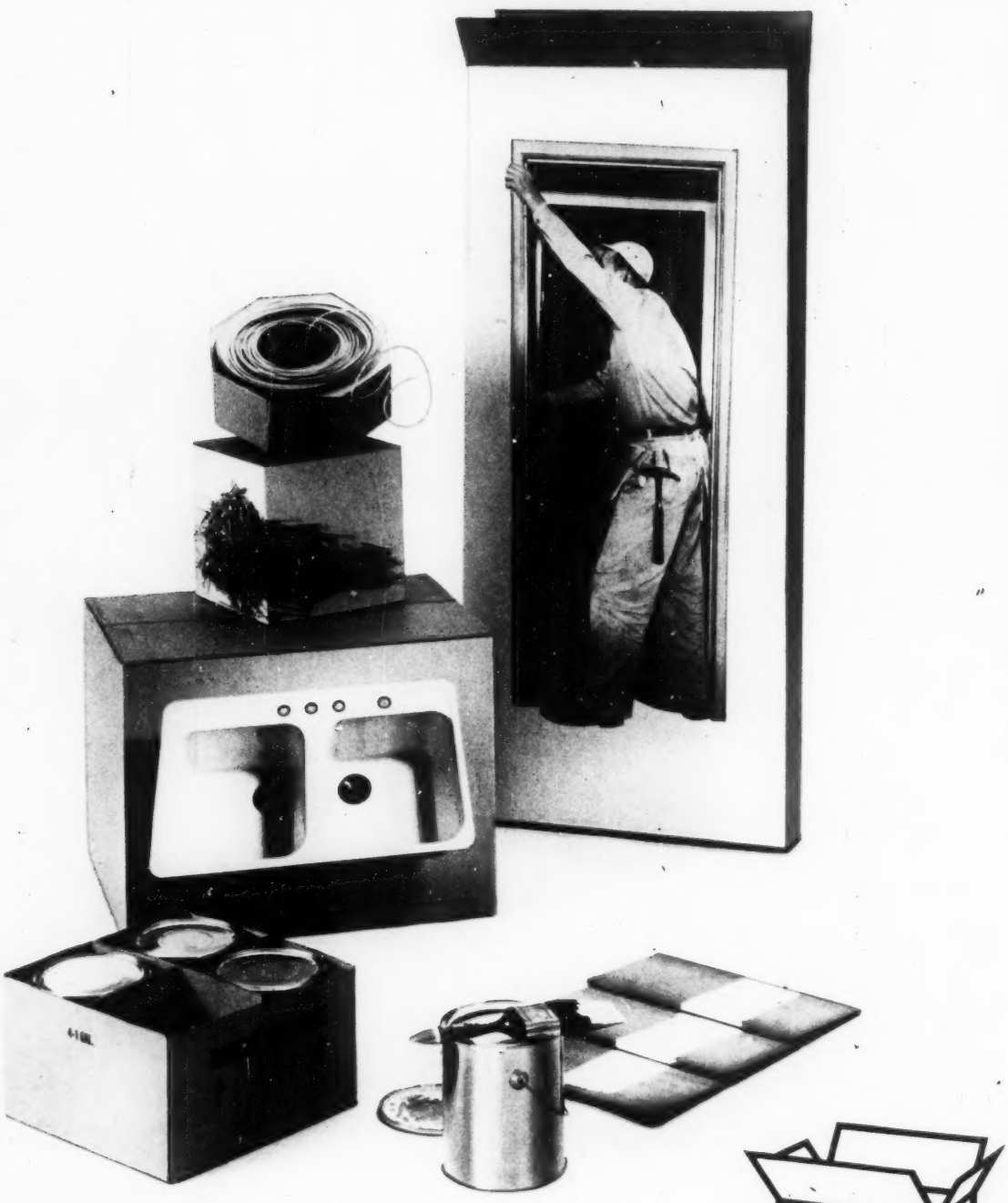
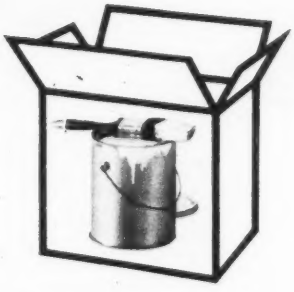


Millions of houses in corrugated

What makes a house a home? The hundreds of parts and pieces that come to the site in corrugated boxes. Hardware. Nails. Tile. Wiring. Roofing. Even the kitchen sink. And who makes the most dependable boxes for building products? Hinde & Dauch Division. That's why so many of the nation's leading manufacturers turn to H & D—and get *economical corrugated boxes in volume.*



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How should a package designer be selected?

Grant Horsey
President
Salada-Shirriff-Horsey, Ltd.
Toronto

Choosing a package-design house is a little like walking a tightrope—good balance will lead to a grand finale, but a slip can often be pretty uncomfortable.

Since our widely diversified food-manufacturing business is a multiplant operation in several countries, we probably exemplify most, if not all, the opportunities a manufacturer faces when he decides to redesign existing packages or launch a new product line.

The most important element in package design is "sell." With due respect to the good-looking, finely designed package—whether it be a box, bottle or plastic bag—if the combined ingredients of that design do not make it a stand-out on the shelf with a "buy me" tag, then that design is not a good one.

We look for a package-design house to be knowledgeable in several fields: Awareness of what is transpiring currently in the market place, willing to use research to find out what the consumer thinks of the proposed design and to be aware of the latest technological developments in materials. Obviously, this idea will not reside with one person, but will be a coordinated effort within the packaging-design house.

I believe that package designers should broaden the scope of their individual capabilities so that, while they may specialize to a degree in one area, that knowledge could and should be utilized in a wider range of design concepts. In this way, new and perhaps radical ideas will emerge which will freshen the marketing scene and, more importantly, move product at an increasing rate. Having established the broad frame of reference—the areas within which the packaging-design houses are free to operate—how is the organization selected? Recognizing the increase in automation in modern food merchandising, the step-up in competitive activity within product groups and from new products constantly being introduced and the fast tempo of modern living today, those in whose hands rests the responsibility for package design have a heavy responsibility and one which will materially affect future sales curves. Since this is a major decision, it must be taken objectively and competitively.

The best basis for judgment is performance on a specific project. Having established, through prior investigation, at least some of the designers equipped by staff and experience to tackle the job, they should be approached separately and the design opportunity presented. Careful note should be taken of the number of questions asked, the alertness of the design team and their willingness to *listen*. Next step is the translation of the ideas presented by the manufacturer into a package design.

When this design is presented, there are more bench marks: Is the presentation on time? How well have the facts been interpreted? Is there a readiness to accept suggestions, or is the design "it"? Is the design practical from a production and merchandising viewpoint, can it be produced on available equipment, will it fit on retailers' shelves, stock well, travel well?

One final point is cost. Every workman is worthy of his hire, but in some instances there is a suspicion that some manufacturers are "paying for the name." Do not misunderstand. There is nothing wrong with a good name, but the name itself is not enough. We must get results, or be swallowed up by competition.

Increasingly manufacturers must rely upon the advice and counsel of design houses. In addition, however, the manufacturer himself must be prepared to contribute ideas and suggestions which he can make on the basis of being identified and associated in a continuing way with the products he manufactures. A good package then is a cooperative effort, combining the skills and knowledge of both design house and manufacturer. Of prime importance is a willingness to be first, to be an innovator. This calls for the courage which can only be found in those who are confident that the design proposed is right, based on a sound background of experience and knowledge.

Herbert P. Watts
Design Section Manager
A. B. Dick Co.
Chicago

Package design at our company is implemented by our design section in collaboration with the industrial-design firm retained on other problems of corporate identity and design. [*Continued on page 210*]

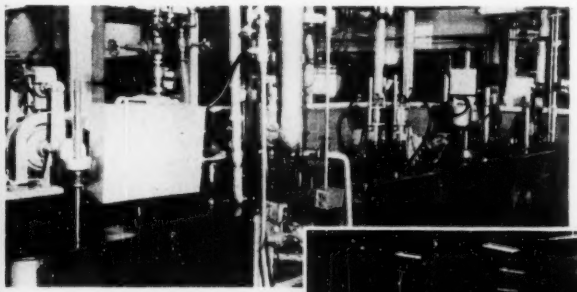
Put YOUR new aerosol product *in orbit* the easy way —on OUR INVESTMENT

Costing more than you expected to introduce your new aerosol product or to manufacture established products? You can reduce your capital requirements tremendously by utilizing FLUID'S contract aerosol filling service. Extraordinary formulating and storage facilities are also available according to your needs—thus relieving you of the entire manufacturing and filling process, if desired.

FLUID owns and operates two of the largest and most modern contract liquid and aerosol filling plants in the country, with seven filling lines. Quality control here is more than a mere catch-phrase. Quality control inspectors are stationed at various points on filling lines. In addition, roving inspectors make frequent checks of samples taken at random.

A completely equipped laboratory and skilled technical staff are capable of formulating your product for liquid, spray or foam dispensing, as may be indicated. An eight-car railroad siding, multiple shipping dock, complete warehousing and handling facilities accelerate deliveries.

Send for further information regarding the complete FLUID contract filling service. Write or telephone Fluid Chemical Company, Inc., 872 Mt. Prospect Avenue, Newark, New Jersey—HUmboldt 4-1000.



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The FLUID Plant has spacious warehousing with up-to-date handling equipment.

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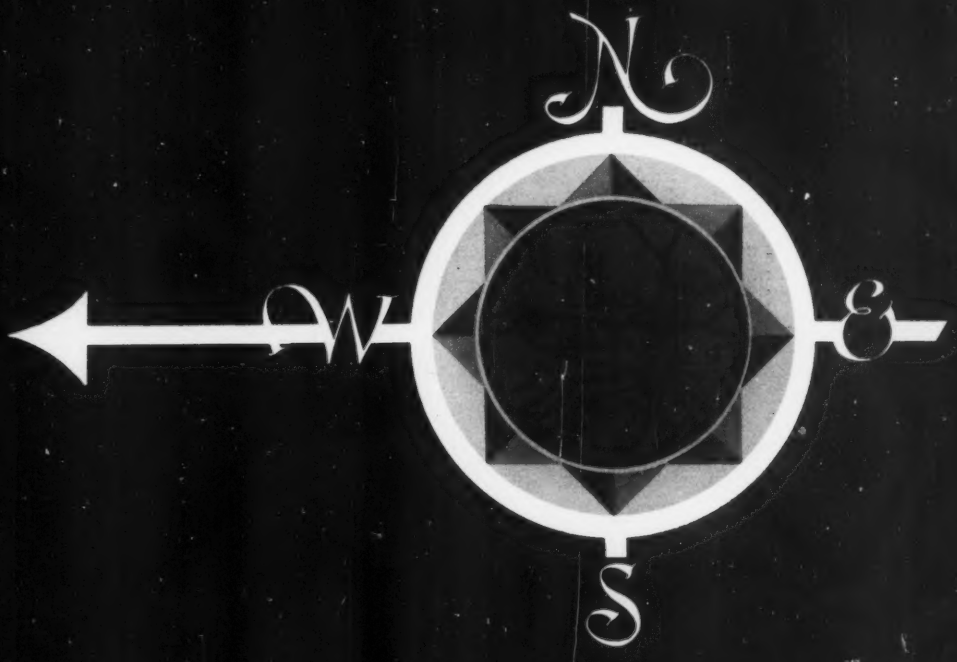

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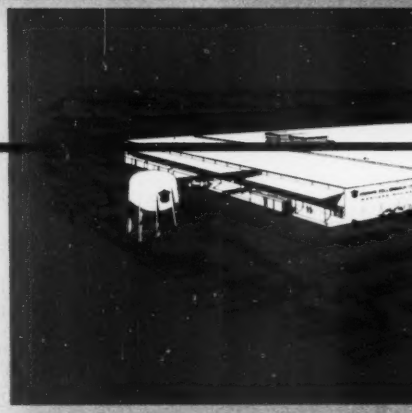

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Western-Waxide major production facilities

*1960 center of population approximately 50 miles east of St. Louis (U. S. Dept. of Commerce)

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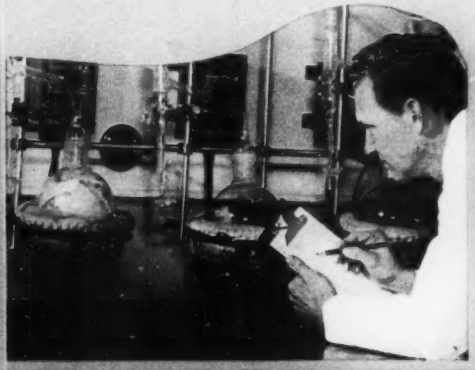
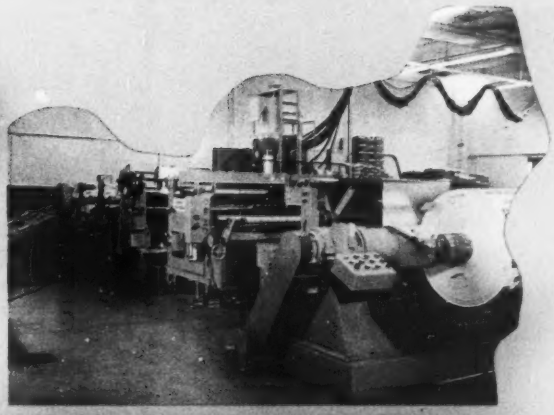
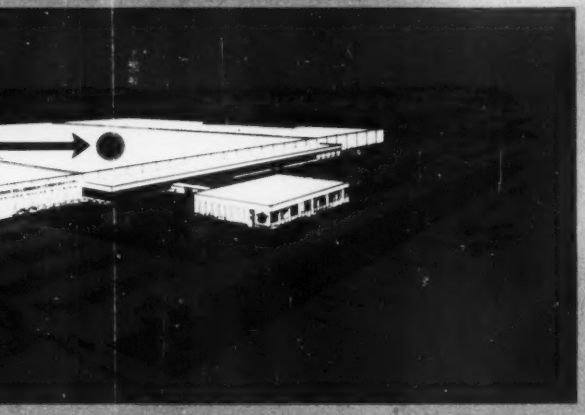
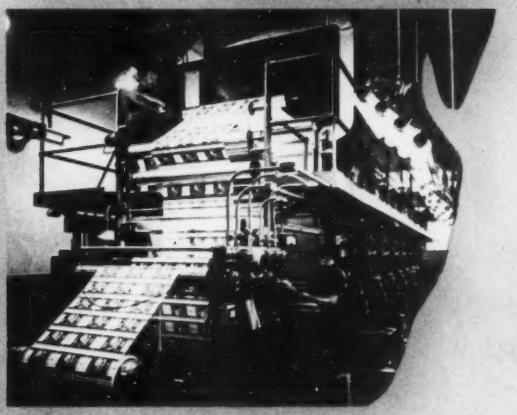
UIS, IS NOW THE

NTER OF THE NATION!









, Western-
packaging
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oratory, a
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polyethyl-
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ng process.
ather truck

and train loading facilities will assure prompt dependable deliveries... wherever you are. This new packaging center will team with our existing St. Louis printed carton plant, the Gaylord Container Division of Crown Zellerbach and a vast nationwide network of Crown Zellerbach paper mills to provide an unequalled source of packaging services. For a sampling of the wide variety of flexible packaging available, see the following page.

CROWN
ZELLERBACH
Western-Waxide Division

Orange, Texas

. . . POINTING THE WAY TO BETTER PACKAGING

We invite you to call on our new St. Louis Packaging Center for a truly wide variety of flexible packaging – materials and packages such as these you see on this page.

Printed Cartons . . . waxed overwraps . . . polyethylene film . . . laminated materials . . . foil and cellophane . . . our St. Louis facilities are capable of delivering *all* of these.

What type of printing do you require? Flexographic? Rotogravure? Lithography? Letterpress? Giant presses are available in St. Louis to give you brilliant hairline printing in any of these processes – in up to eight colors!

Great packaging, however, requires more than machinery. One important asset of our St. Louis plant is Western-Waxide's 44 years of experience in producing packaging that wins sales for our customers. Wherever you are, our corporation's integrated services, including Research, Design and Technical Engineering, are available from each of our regional packaging centers.

For full details on how we can serve you, call on your nearby Western-Waxide representative, or write us direct.

310 Brown Road, Hazelwood, St. Louis County, Missouri.
In Canada, address inquiries to Crown Zellerbach Ltd., Vancouver, B.C.

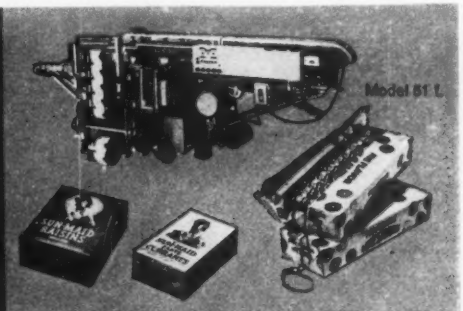
CROWN ZELLERBACH
Western-Waxide Division

BATTLE CREEK'S MODEL 51 SERIES PROVIDES

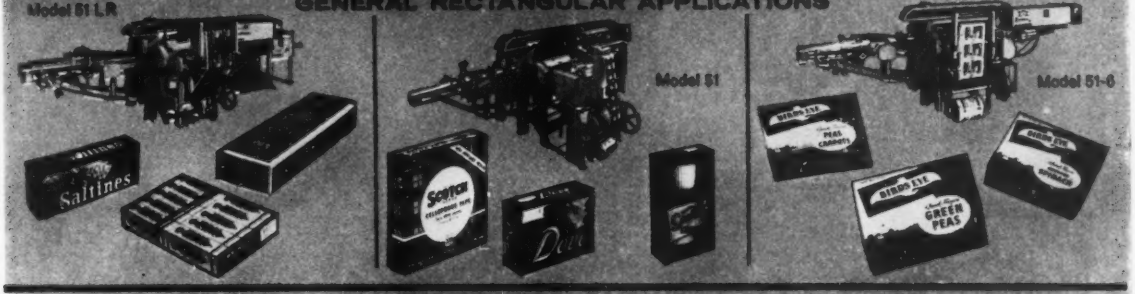
SPEED WHEN SPEED COUNTS!

Here are six Model 51 machines "tailored" to solve individual packaging problems created by the inherent nature of the product, the high speed demands of prior processing equipment and the need for impelling product sales appeal. One of these models is best suited to precision package your product neatly, tightly in heat-sealing cellophane, laminated papers, wax-coated papers or heat-sealing foils. Each model has the same universal "Continuous Flow" characteristics which offer dramatic labor saving advantages and unique operating economies. All are ideal for long production runs of products within these size ranges: 3¼"—5½" long or 6"—11" long, 2½"—4¼" wide and ¾"—2¼" high. Inquire today about the Model 51 series and discover what Battle Creek Packaging Machines can do for you.

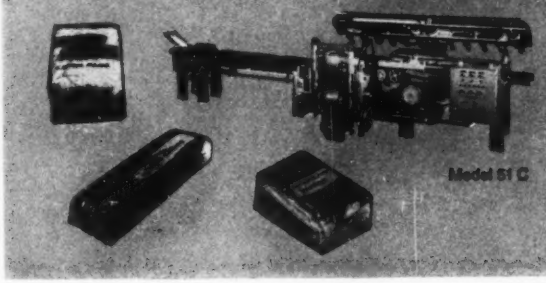
eliminate frustrating
production bottlenecks with
overwraps of 120 to 240 per minute



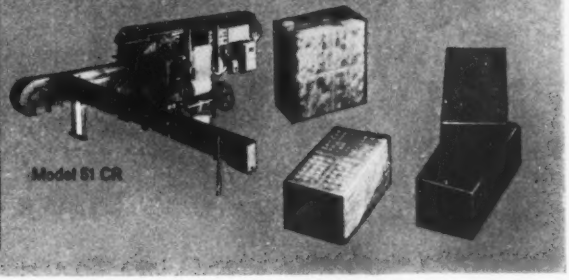
GENERAL RECTANGULAR APPLICATIONS



SOFT IRREGULAR PRODUCTS



FRACTIONAL CRACKER PACKAGES



Continuous Flow® PACKAGING

BATTLE CREEK *packaging machines, inc.*, BATTLE CREEK, MICH

DESIGNED TO SELL

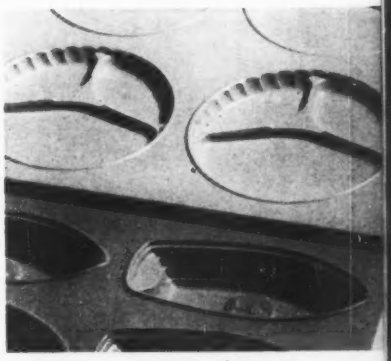
Lustrex impact styrene for formed packages

Command sales attention with colorful, disposable formed containers made of Lustrex styrene... ideal for packaging, counter service, vending and dispensing. These thin gauge containers, combine eye and appetite appeal with serviceability . . . lightweight, and just the right amount of impact strength and toughness to do the job at the right price.

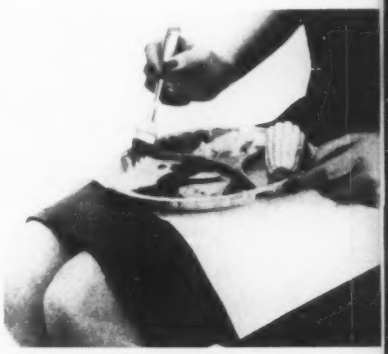
For more information on Lustrex and Santofome in formed packages, mail the coupon below.

LUSTREX Reg. U. S. Pat. Off.
SANTOFOME: T. M. Monsanto Chemical Company

MONSANTO DESIGNER IN **PLASTICS**



Close quality control on color, strength and uniformity of Monsanto Lustrex assures continuous flow, rapid multi-unit production.



Need insulation for hot and cold contents? New Santofome foamed styrene film, combined with Lustrex styrene sheet, makes containers comfortable to hold.

Monsanto Chemical Company, Plastics Division
Room 823, Springfield 2, Massachusetts

Please send me information describing: ☐ Where I may obtain sample packages formed from Lustrex
☐ Lustrex for the manufacture of formed packages
☐ Santofome foamed styrene film

Monsanto

Name_____ Title_____

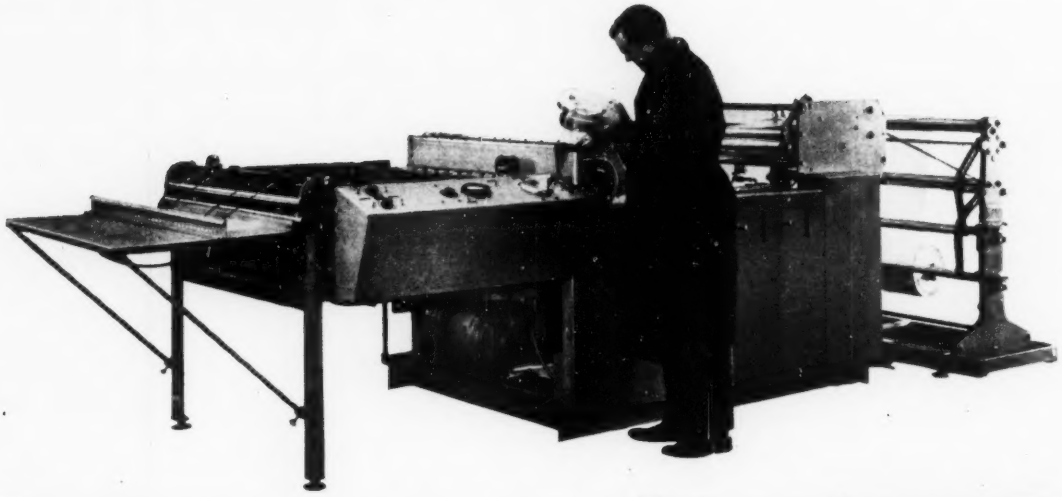
Company_____

Address_____

City_____ State_____

CONVERTIBLE FOR SIDE WELD OR BOTTOM SEAL BAG PRODUCTION

SIMPLEX 200 SERIES

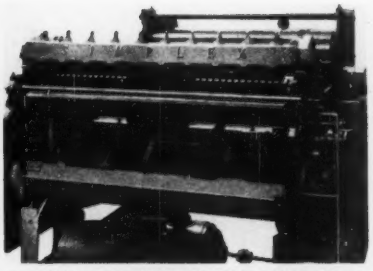


SIMPLEX MODEL 210 COMBINATION BAG MACHINE WITH BOTTOM SEAL ATTACHMENT

NEW CROSS SEAL ATTACHMENT, built-in for quick changeover on the Simplex 200 Series side weld models, adds bottom seal bag production versatility to these proven machines. Performance features include: Exclusive, multiple-blade, short stroke knife action which will cut at top machine speeds • Bottom seal bags at speeds up to 125 cycles • Two printed webs for 250 bags per minute • Positive and adjustable sealing pressure • Extra-strength relaxed-type seals • Fixed skirt length.

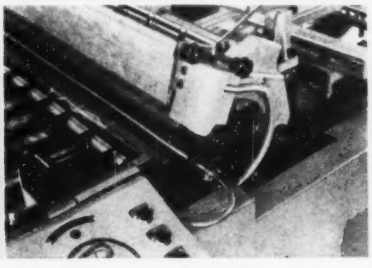
For bottom seal or side weld bags, the Simplex 200 Series is the sturdiest, high-production bag-making equipment you can buy.

See your Simplex® man for full details.



PARTIALLY ASSEMBLED VIEW SHOWS SEALER, PAD AND HOLD-DOWN ASSEMBLY

SEALER, PAD, HOLD-DOWN KNIFE SECTION



fmc
FOOD MACHINERY AND CHEMICAL CORPORATION®

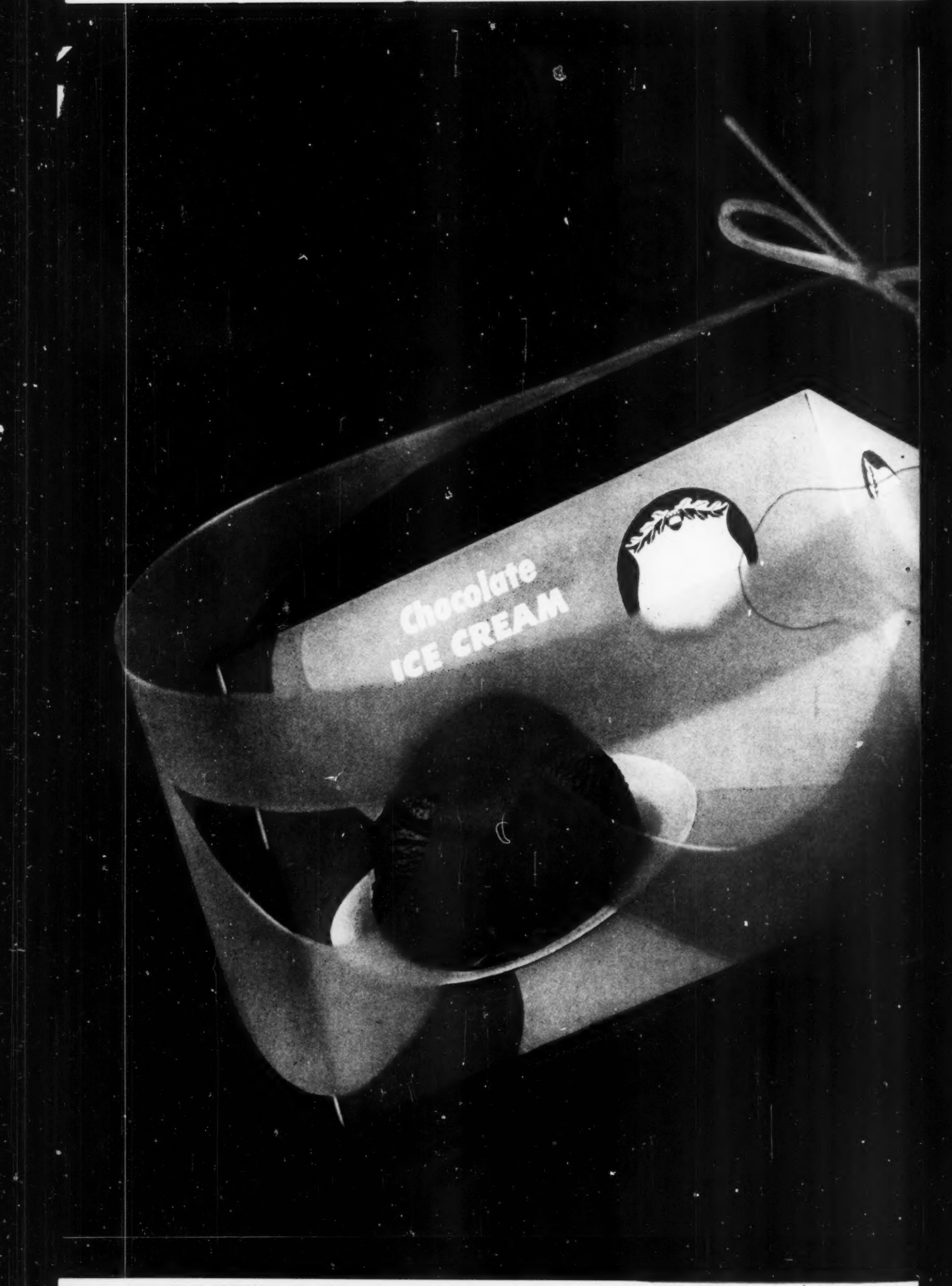
Putting Ideas to Work

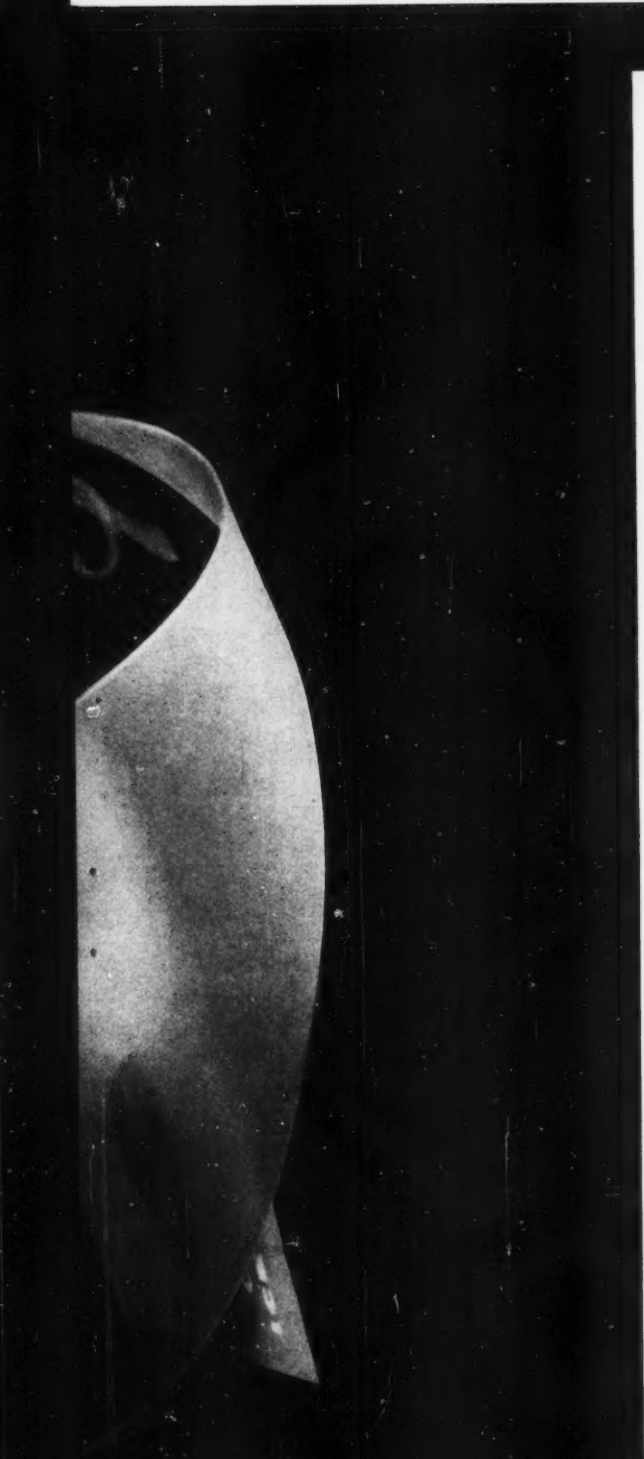
FMC Packaging Machinery Division
SIMPLEX PLANT
534-23rd AVENUE, OAKLAND 6, CALIFORNIA
International Sales: FMC International Ltd.
P. O. Box 638, San Jose, California

The hot ideas in packaging have a habit of popping up at Milprint! One reason is that no other source works with such a wide variety of packaging materials . . . or has such vast experience in combining them for "custom built" laminations or extrusions. The result is sparkling, image-of-quality, protective packaging — like that produced by Milprint for Downyflake toaster-ready frozen waffles, pancakes and french toast. Put Milprint research and development to work on **your** packaging! Nationwide facilities assure fast, economical delivery of any quantity. Review your packaging regularly with Milprint experts! Start now.

MILPRINT PACKAGING GIVES YOUR PRODUCT MARKETING POWER

MILPRINT, INC. General Offices, Milwaukee, Wis. Sales offices and plants conveniently located across the nation.


Chocolate
ICE CREAM



Are you masking your best salesman?

New Pollocote makes package design pop out

Masks should be worn by thieves or actors . . . not salesmen. Yet you may be robbing your package of its true sales potential by masking its personality behind a dull finish.

But now the Folding Carton Division of St. Regis® has created a new *semiplastic* coating called POLLOCOTE that adds a high luster finish to packages. Butter or berries, drumsticks or desserts all spring to appetizing life in full-blown, sparkling color. Whatever you package, it's beautifully protected, too; for POLLOCOTE—on both the outside *and* inside of the carton—guards the quality of your product so that it stays just as fresh and good as it looks.

New developments in coatings, boxboard, carton construction and design have helped to establish St. Regis as a leader in the folding carton field. And all our services are at *your* service. We'd really like to tell you lots more about POLLOCOTE, and show you some samples that fairly sing out with high-fidelity reproduction. Just find the St. Regis plant below that's nearest you and drop us a line today, won't you?

Imaginative packaging means a lot in any business . . . and St. Regis folding cartons *mean business.*

FOLDING CARTON DIVISION

St.Regis PAPER COMPANY

WORLD REPORT

*Digest of foreign packaging developments**

GERMANY

Automatic taper to seal slip-lid containers

A German firm has developed an automatic unit for sealing self-adhesive tape around lids of slip-lid containers. Two versions for different-sized containers operate at speeds from 1,300 to 1,400 containers an hour. Any type of cloth or self-adhesive* film may be used. Containers are fed to the machine by hand or by conveyor feed. A cam presses them into a series of holders which bring them to the correct height for sealing. The adhesive tape is automatically wound around the container, pressed against it and cut off evenly. After further pressing of the tape against the container, the sealed package is ejected from the holder.

ENGLAND

Container prices forced up

Prices of most basic packaging containers are being forced up by increasing labor costs in the U.K. Wage increases in the metal-box industry apparently cannot be absorbed without a rise in prices. Similar increases in the paper bag and box industries are sending prices up in these areas. The British Paper Box and Paper Bag Federations say wage costs have gone up 13½% in a year. This, accompanied by rises in the cost of some materials and re-evaluation of foreign currency, it is stated, can no longer be absorbed without passing on increased costs to customers. The Fibreboard Packing Case Makers' Assn. says price rises of their products are likely soon due to reduction in working hours and a wage increase agreed a year ago.

Packaging course at University of Reading

The first residential university course in packaging in the U.K., organized by the Institute of Packaging in Britain, has been completed. Thirty-three students from the U.K., South Africa and Ireland attended the course conducted at the University of Reading. The ambitiousness of the program crowded into the two weeks of lectures, discussions, films and visits to factories can be appreciated by the listing of subjects covered: principles of packaging; elementary materials handling; cushioning; packaging of light engineering products, domestic appliances and pottery; principles of adhesion; selection of shipping containers and unit containers; protection against permeability, mold growth, insect attack; package testing; packaging as part of the production process; packaging machinery; packaging of pharmaceuticals, cosmetics, corrodible articles, textiles and clothing; display and visual design; labeling; standardization, and military packaging.

SPAIN

Catalog of Spanish packaging industries

The second catalog of packaging industries in Spain is now being compiled by *El Instituto Español del Envase y Embalaje*. It will contain firm names, addresses, type of supplies produced, names of representatives, distributors, importers and exporters. The information will be further classified alphabetically, by geographic location, by materials and equipment produced, and functional applications.

SWITZERLAND

Possible convenience for opening sardine cans?

A device for opening cans of herring fillets illustrated in *Tara* (Switzerland) may suggest a way to eliminate the aggravating key opening of sardine cans. The flat, rectangular tin has a cord of rubber lodged below the lid to seal the package. When the tin is sealed, only a tab of the rubber is visible. To open the tin, it is necessary simply to pull the tab to remove the rubber seal so that the cover comes free. After much development work, the easy-opening device, known for some time, reportedly has been perfected for use in canning hot-processed items.

AUSTRALIA

New shopping center near Melbourne

Changing times in merchandising around the world are significantly illustrated by a description of Australia's newest and largest shopping center. Called Chadstone—just 10 miles from Melbourne—it occupies 30 acres of former pasture land and was built in 20 months at a cost of £6-million ($16,800,000). It has parking space for 2,500 cars and its own radio station. Its 83 tenants include a three-story department store and large supermarket. In addition to buying a week's supply of groceries, or clothes and furnishings, shoppers may consult a doctor, dentist or physiotherapist, place a bet, see a dramatic production in a 300-seat auditorium, view an exhibition of paintings or a mannequin parade, have their poodles clipped, cash a check, pay their hospital-benefits contribution or simply refresh their eyes on the green lawns and flower beds in the garden plaza. And, of course, there is an in-store meat-packaging section in the supermarket where customers may watch their favorite cuts of meats being wrapped in cellophane through a glass partition. It is estimated that some 100,000 shoppers visit the new shopping center weekly.

SWEDEN

Modular system for standard textile packs

The Swedish Standards Assn. has adopted a modular system based on 15 standard dimensions for clothing and textile packs. Using the standard measurements, it is reportedly possible to obtain 28 different pack sizes in each of eight standard heights. The system was devised after careful consideration of existing and new methods of folding merchandise. It was found, for example, that sheets could be folded in different ways from the traditional long, narrow shape without loss of sales provided that the package itself was attractively designed. The new dimensions facilitate the design of patterns to fit standard pallets.

CANADA

15 graduate from packaging course

The Packaging Assn. of Canada presented diplomas to 15 graduates of PAC's second two-year, 33-lecture course in packaging during April. The course, conducted in Toronto, is aimed to give broader understanding of all aspects of the packaging industry to people who are already engaged in various phases of packaging activity.

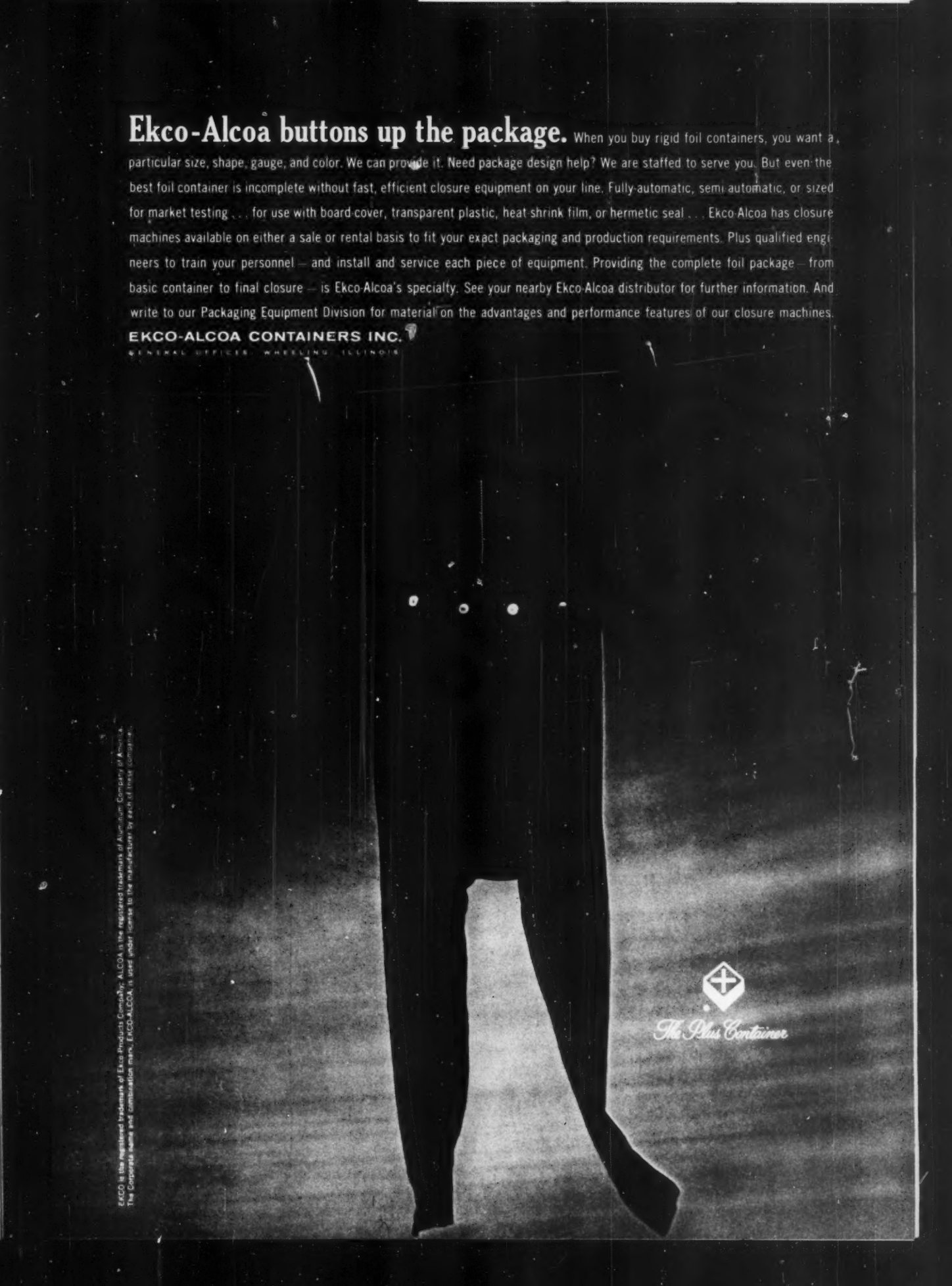
*For additional information, write: World Report Editor, MODERN PACKAGING, 770 Lexington Ave., New York 21.

Ekco-Alcoa buttons up the package.

When you buy rigid foil containers, you want a particular size, shape, gauge, and color. We can provide it. Need package design help? We are staffed to serve you. But even the best foil container is incomplete without fast, efficient closure equipment on your line. Fully-automatic, semi-automatic, or sized for market testing . . . for use with board-cover, transparent plastic, heat-shrink film, or hermetic seal . . . Ekco-Alcoa has closure machines available on either a sale or rental basis to fit your exact packaging and production requirements. Plus qualified engineers to train your personnel — and install and service each piece of equipment. Providing the complete foil package — from basic container to final closure — is Ekco-Alcoa's specialty. See your nearby Ekco-Alcoa distributor for further information. And write to our Packaging Equipment Division for material on the advantages and performance features of our closure machines.

EKCO-ALCOA CONTAINERS INC.

GENERAL OFFICES · WHEELING · ILLINOIS



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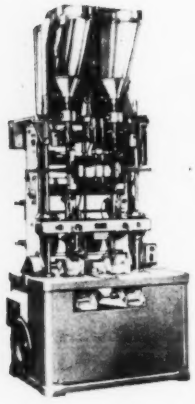
FMC Stokeswrap performance is proved at Nestlé for "instants"

At their plant in Sunbury, Ohio, The Nestlé Company depends upon performance-proved Stokeswrap to package "instant" products—tea, coffee and cream. Three FMC Model BS Stokeswraps with auger feed provide fast, accurate filling of all these products with their different flow characteristics. Sizes range from individual servings up to packages with enough product to make a gallon of iced tea.



Many producers of instant coffee and tea, like Nestlé, use the Stokeswrap. Most important coffee roasters also rely on the Stokeswrap for automatic packaging of regular ground coffee in institutional sizes up to 8 ounces. • It forms, fills and seals 50 to 100 packages per minute from roll stock of printed or unprinted paper, cellophane, Pliofilm or other heat-sealable material either single-ply, double-ply or laminated. Choice of four-seal type of package illustrated or pillow-type pouches. • For smaller sizes a new 4-tube machine requiring no more space than standard models can increase speeds to as much as 200 per minute. • Another Stokeswrap model forms, fills and seals tea bags—cup, family and institutional sizes. With attachments it automatically staples string to bag and tag to string on cup sizes. • Optional equipment is available for coding, imprinting and gas flushing.

For the full story of the proved-in-performance Stokeswrap design, write for Bulletin P-801.

Putting Ideas to Work

FOOD MACHINERY AND CHEMICAL CORPORATION
FMC Packaging Machinery Division
Stokes & Smith Plant
4904 SUMMERDALE AVENUE, PHILADELPHIA 24, PA.

Container by Mead Corp., Atlanta, Ga.

ACETATE WINDOWS CLEARLY SPARK SALES

Take this successful *Pata-Cake* promotion, for example. To sell in the big, *competitive*, billion-dollar infant's wear market, a package *needs* the sales touch that Celanese Acetate provides. And that's just as true for *your* product and market, too.

• Celanese Acetate windows give a product a showcase of its own. It's flat-smooth, dimensionally stable. No wrinkles or pull lines mar its crystal transparency. Shelf-life items stay fresh-stock new.

• For a clear account of how Celanese Acetate can spark sales for your product, write to: Celanese Plastics Company, 744 Broad Street, Newark 2, N. J. Celanese®

MATERIALS FOR Celanese MODERN PACKAGING

POLYETHYLENE FILM . . ACETATE FILM AND SHEETING . . PLASTIC CONTAINERS

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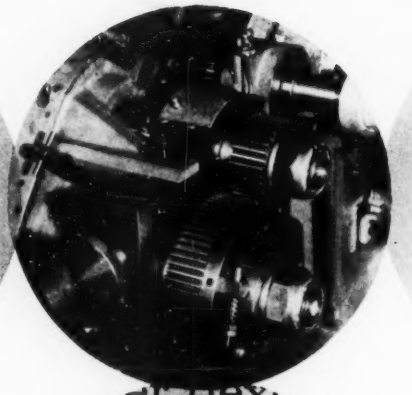

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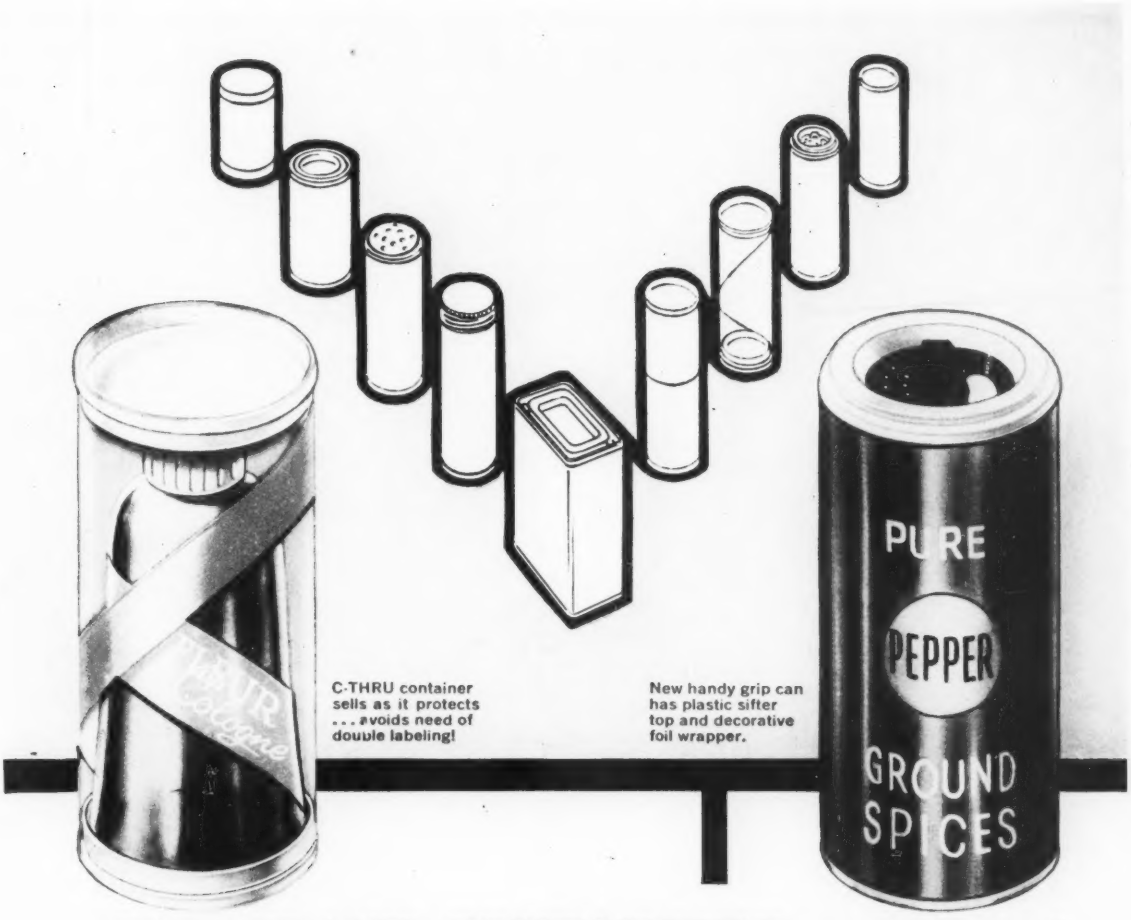
Find out how much it's costing you not to use a KIDDER CENTRAFLEX®. Investigate the up-to-the-minute features that are built into this new 6-color Flexographic press... to eliminate the cost of buying them later. Learn how you are Profit Protected by Kidder Performance Engineers... who assure consistently high output with every Kidder unit, from installation on. For details contact Kidder Press Company, Inc.

KIDDER

Sales Offices in New York City; Madison, Wisconsin; Los Angeles, California • Manufacturing Plants in Dover, New Hampshire



C-THRU container sells as it protects . . . avoids need of double labeling!

New handy grip can has plastic sifter top and decorative foil wrapper.

CLEVELAND CONTAINERS are tailored to your product...at lower unit cost!

Big quantities or small, our strategically located plants are geared to make ALL kinds of spirally wound and convolute fibre cans which will be ideal for your product . . . with prompt delivery assured. CLOSURES — wide variety of paper, metal, and plastic. LINERS — full line of moisture and grease resistant types available. LABELS — choice of eye-catching designs, direct printing, and plain color wraps.

Need help designing the correct package for your product? Our Engineering Department will gladly assist you.

WRITE FOR OUR LATEST PACKAGING BROCHURE!

THE TOP THAT STACKS! This new all-plastic closure smoothly dials to sift, pour and closed positions.

COMPLETE LINE OF TUBING . . . made to your specifications! Chipboard, jute, kraft, fish paper, plastic films, etc. Any length . . . wall thickness . . . diameters up to 24". Also, special tubing for electrical uses.

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CLEVELAND CONTAINER
COMPANY

6201 BARBERTON AVE. • CLEVELAND 2, OHIO

ALL-FIBRE CANS • COMBINATION METAL AND PAPER CANS
SPIRALLY WOUND TUBES AND CORES FOR ALL PURPOSES

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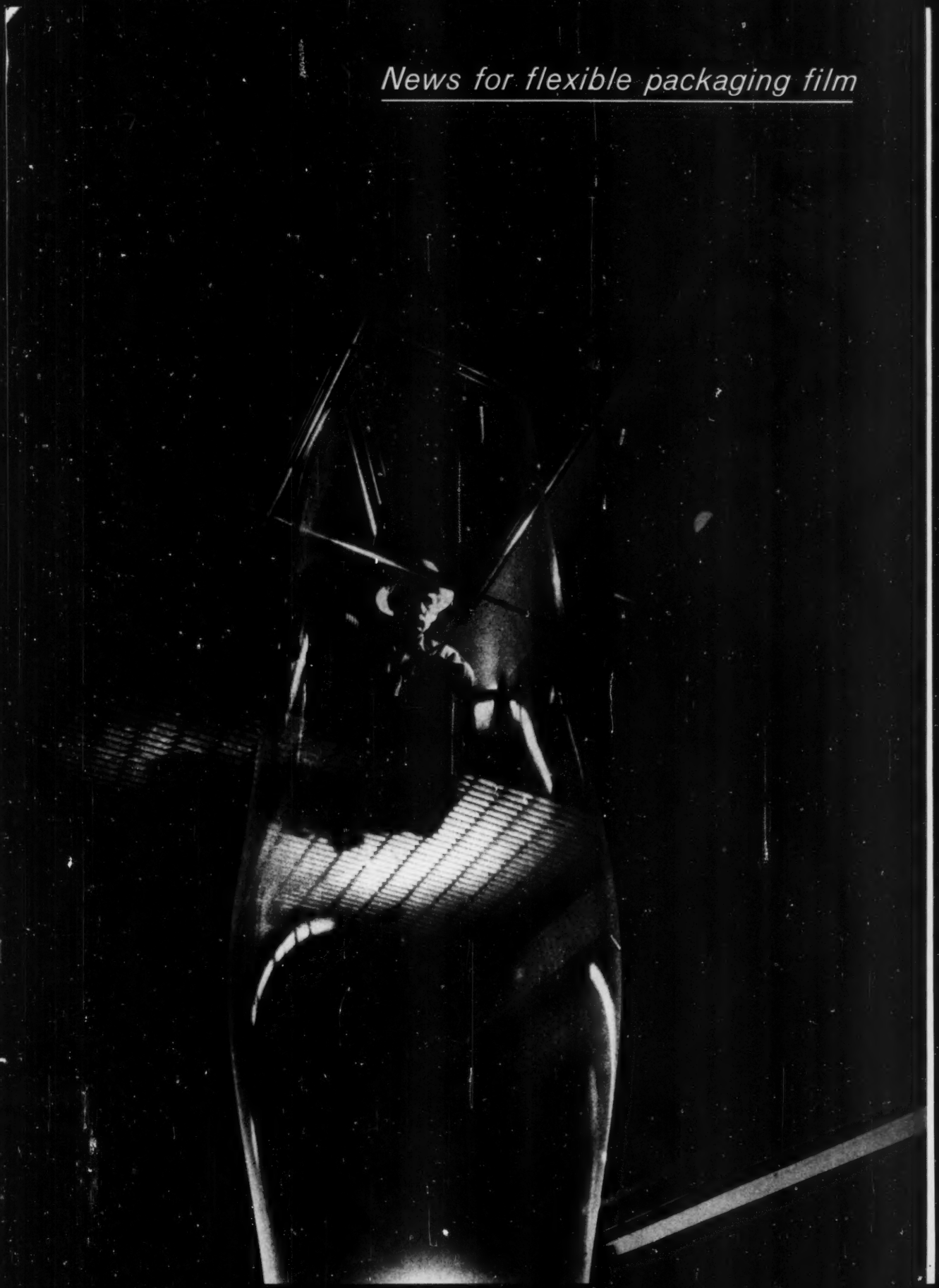
Abrasive Division at Cleveland

News for flexible packaging film



converters and buyers...

REXALL DRUG & CHEMICAL adds a brand-new division!

Now...we can supply polyethylene film to the entire packaging field on a local level—from coast to coast!

To better serve a growing need among packaging converters at the local level, coast-to-coast...the Rexall Film Division now adds a new note of confidence for buyers who want highest quality and top grade uniformity, in their polyethylene film. The establishment of plant facilities in three strategic geographical areas: California, Wisconsin, and Rhode Island provides for swift and easy delivery...and better service. Whether you convert polyethylene for packaging textiles, toys, foods, baking, produce or candy, Rexall provides you with a choice of films in the low, medium, or high density range. In any of these, you are assured the qualities of clarity, gloss, durability and toughness. The Rexall name, long a hallmark of quality in its almost exclusive identity with the drug field, continues the same high standard of excellence for its products in this new diversity—the Rexall Film Division. So now, when you think of highest quality polyethylene—you will think, synonymously—of Rexall.

Film Division

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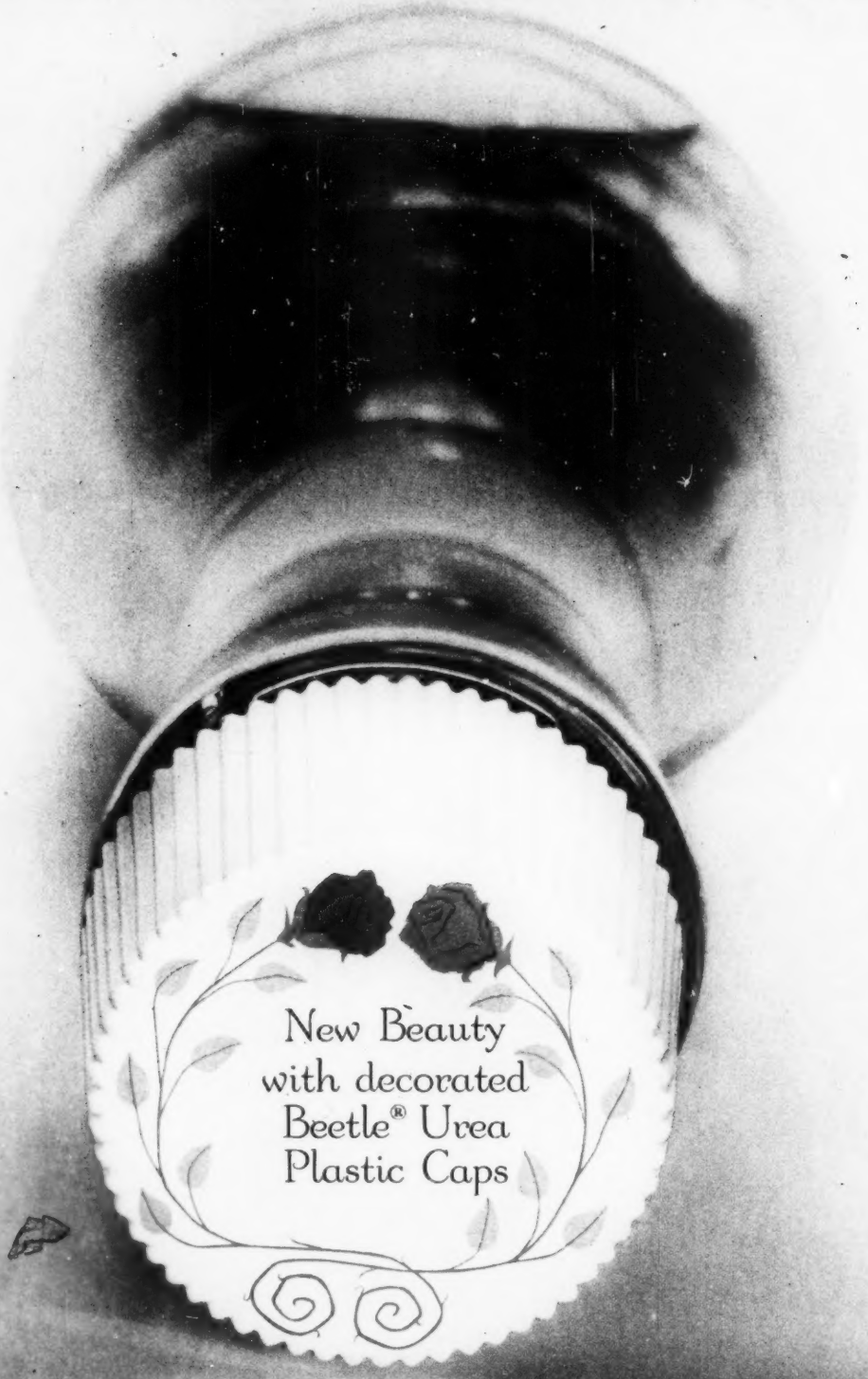

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EDITORIAL MEMO

A deceptive hearing

The Senate hearings on deceptive packaging started off on a high note of levity. Let's hope that they end on a more sensible note.

As we have said before, this is not a laughing matter. The rules by which packaging has lived are in process of change and if the new rules place any product in danger of being declared deceptive, the packager wants to know this and to make such changes as will place his package above reproach. The packager is at least as concerned with consumer opinion as are any of the consumer advocates who attacked him so shrilly during the three day Senate hearings; his business depends upon it.

It was right that the consumer representatives should be heard. It was their agitation—and perhaps rightly so—that brought about the Government campaign to tighten regulations, culminating in the Senate hearings.

It was not right that these very vocal and largely misinformed witnesses should have been allowed to dominate the three days of hearings, which were then quickly adjourned with little or no opportunity for responsible representatives of packaging to answer.

It was not right that Senator Hart, presiding over the hearings, and Senator Maurine Neuberger, a witness, should have joined the witnesses in the type of headline baiting which left the impression that all packaging is conniving and evil. It was Senator Hart, in fact, who drew the first laughs with his suggestion that maybe the butcher's thumb now comes "in a fancy package" and his references to "pocketbook picking." This inevitably set the unfortunate tone of the Senate hearings.

You probably saw the headlines and the nationwide TV and newsreel clips that resulted, as one witness after another lambasted packagers, tarring all indiscriminately with the same wide brush. Enough of the testimony is cited in a special article in this issue (starting on p. 107) to give an idea of the feelings and the pressures that were generated.

In the entire three days, the only statements exposing the fallacies of much of the testimony came in a brief appearance at the very end (after headline writers had tired of the subject) by Thomas P. Wharton, Washington packaging consultant, and in a statement by the editor of MODERN PACKAGING (see p. 110D), which was entered in the record, but not read.

We have the assurance of Senator Hart that the hearings will resume in the fall. We can only hope that packagers will then be given full opportunity to correct a deceptive and misleading picture and that from it all will come something constructive for both the industry and consumers.

The Editors

Modern Packaging, Executive Offices, 770 Lexington Ave., New York 21. Teletype: TWX-NY 1-3062. Cable address: Breskinpub. **Member**, *Packaging Institute, American Management Assn., European Packaging Fed., British Inst. of Packaging.*

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new products that do more for you . . .

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MODERN PACKAGING
AUGUST 1961 Vol. 34 No. 12 THE COMPLETE AUTHORITY OF PACKAGING

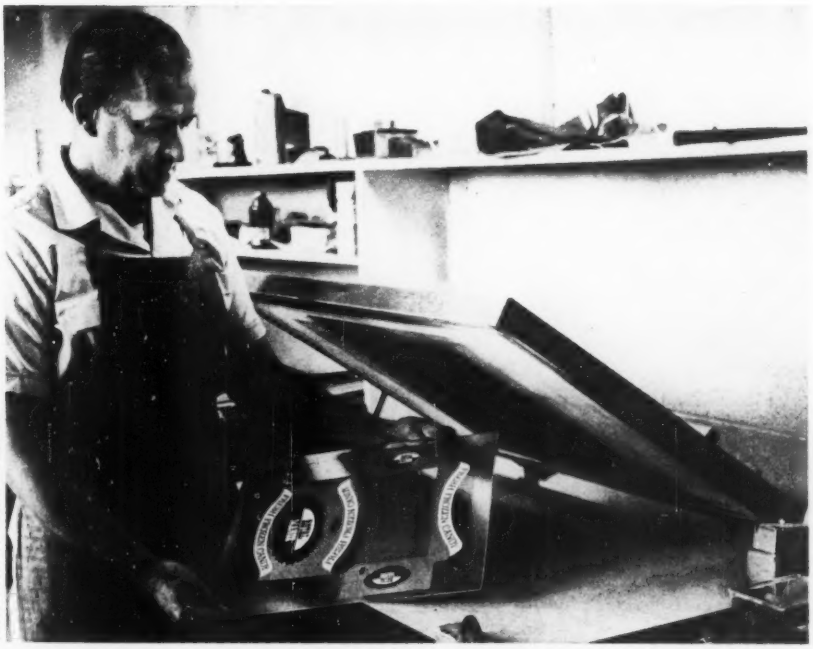


PHOTO COURTESY REYNOLDS METALS.

Endless search *for enhanced beauty and economy in carton printing leads to new surfaces for paperboard, better inks and such speedier methods of "proofing" designs as silk screening. Here, in Reynolds Metals' fully equipped printing laboratory, a stock design for a foil-laminated candy carton is worked up in silk-screen inks that match those to be used for commercial printing of the container by flexography or lithography.* *(See photo, p. 96.)*

Shifting trends in printing

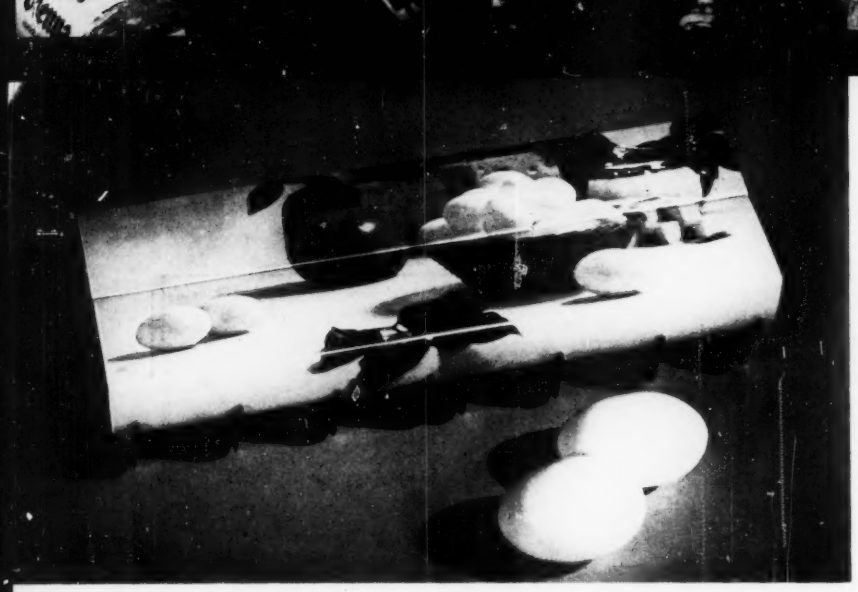
Part 1: Cartons. *What the carton user needs to know about new and improved techniques, inspired by changing marketing needs, that may affect his choice of design and production*

Anyone with half an eye for package decor can sense a strong swing to more colorful and intricate surface designs on all forms of packaging, tending to give today's supermarkets and other mass-market outlets a Technicolor quality.

Yet even some experienced packagers are not fully cognizant of the sweeping technical improvements in printing that have made such vibrant package design possible—rapid advances in techniques, printing presses, printing inks, as well as board surfaces that enable packagers to get more merchandising impact for their design dollars.

While these changes affect virtually every type of packaging, nowhere has improvement been more striking than in folding cartons, the subject of this first in a series of articles on trends in printing.

Two needs have led to dramatic advances in carton printing: economy and quality. But since carton packaging is diverse in type, volume and sales objective, these two factors cannot be provided



Upgrading *of products is an important function of fine surface design, particularly for such common products as eggs. Lithographed cartons with "soft" kitchen designs such as this new four-color stock container, have greatly increased supermarket sales, even though they cost a little more than conventional letterpress or flexographic-printed cartons. Carton by Continental Can.*

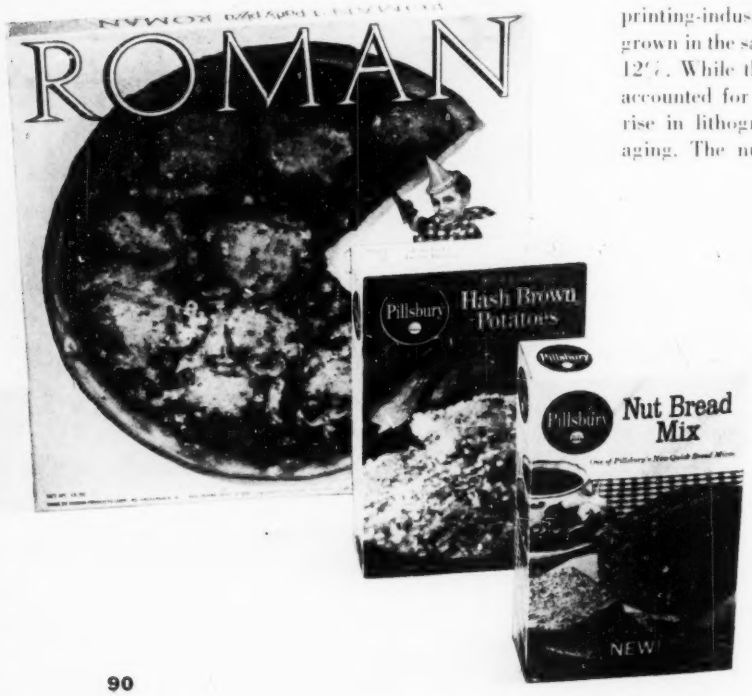
by any single printing process. Rather each printing process offers the packager a different combination of advantages suited to different purposes.

Today, there are simultaneous trends to lithography and gravure in carton printing for mass markets and a rise in flexography for solid-color and line work and in silk-screen printing for specialty products. New developments in all of these processes enable one or more to satisfy the special objectives of particular applications.

But progress has not been limited to techniques alone. Finer printing has been facilitated by the development of new inks with faster drying times and of fluorescent and transparent colors that create strikingly unusual effects. The surface of paperboard, likewise, has been improved to receive these inks by the addition of new fillers and coatings, or by laminations of foil or thin papers.

Figures proving the shifts in processes are difficult to get in their entirety and must be arrived at indirectly. But an indication of what is happening in this field can be seen in industry statistics on sale of printing inks, estimated for this article by the General Printing Ink Div. of Sun Chemical Corp. (GPI). These figures show that package printing, in total, is growing strongly for all processes—up 35% from ink sales of $80,000,000 in 1957 to $120,000,000 in 1960. Over this same period, gravure has grown 22% to $18,000,000 and flexography has increased 28% to $32,000,000 in ink sales. The remaining $70,000,000 is split between two processes: lithography and letterpress.

No individual ink sales figures are available for either lithography or letterpress, though total printing-industry figures show that lithography has grown in the same four years by 20%; letterpress by 12%. While the increase in letterpress is probably accounted for mainly by the publications field, the rise in lithography has been mainly due to packaging. The number of lithographic plants in the



Appetizing detail *that sells foods is accomplished with full-color lithography to picture finished product. Such designs are particularly important where partially prepared frozen or dehydrated foods are concerned. Cartons by U. S. Printing & Lithograph.*

Versatility *of lithography is exemplified by this multicolor carton (see accompanying tip-on illustration) that also incorporates crisp black type on the customer-data bottom panel. Wrap-around design covers three panels. Carton by Lord Baltimore Press.*

Lithographic printing *makes possible this subtle design, which utilizes six background and four process colors to render the delicately lighted vignette on six new cartons for Helene Curtis's professional permanent wave. Face of the carton is shown here.*

COURTESY LORD BALTIMORE PRESS.

U. S. has increased 33% in the four years between 1957-1960, according to one printing source, indicating the tremendous boom in this technique.

While these figures are for the entire packaging field, they exemplify the trends in carton printing specifically. For example, here is how some leading package-printing experts note the current shifts in printing techniques for big-volume uses of cartons:

- *Milk.* Now changed almost entirely from letterpress to flexography for faster roll-fed printing.
- *Cigarettes, cereals and soaps.* Steadily changing over from letterpress and flexography to gravure for higher speeds and finer reproduction.
- *Frozen foods, ice cream and eggs.* A big trend from letterpress to lithography or gravure for economy and subtle halftone illustrations.
- *Cosmetics and specialty products.* Lithography is employed for large-volume runs, while silk screening is used for short runs and special effects.

Letterpress printing is still economical and it still accounts for more than 50% of carton printing, primarily for such high-volume products as soaps and cereals. Furthermore, recent innovations in high-speed rotary letterpress equipment, which was first used predominantly in the publications field, may eventually be important in packaging, particularly if pre-printed and laminated liners for cartons and corrugated shippers increase in use.

Growth in lithography

By far the most sweeping trend in carton printing is to lithography (offset printing), sparked by the growth in popularity of pictorial designs. On cartons of such prepared foods as cake mixes and cooked dinners, good reproductions necessitate a high-quality halftone or dot pattern of many colors and a printing process that can apply them to a comparatively "rough" board surface. At the same

time, the tight economics of the food field demand low-cost printing plates, fast production and the ability to gang up combination runs of different cartons to give flexibility and minimum costs.

Packagers of toiletries, cosmetics and other non-food goods have also been caught up in the pictorial trend and want soft illustrations of users benefiting from the use of their products.

All of these requirements are admirably met by lithography, which started its climb to mass popularity about 10 years ago. Developments have been rapid. Expanding from two-color presses to equipment handling four, five and now six colors, high-quality lithographers have refined their art, taking advantage of the new, faster-drying inks and the smoother bleached and coated boards, according to Sinclair & Valentine Co., the ink-manufacturing division of the American-Marietta Co. Also important to packagers are such improvements as split-ink fountains to turn out cartons of almost unbelievable delicacy in shading and design.

Lithography is relatively inexpensive. For medium-sized runs of a few hundred-thousand cartons, according to a major converter, plate costs and other make-ready for offset printing are almost 40% less than that of gravure and even slightly less than letterpress. On the press, litho is considerably less expensive than letterpress printing and only a shade more than gravure. Furthermore, if changes must be made in the copy or design on the carton, new lithography plates can be made in only a matter of hours for about one-third the cost of gravure cylinders (which take days to engrave).

Capitalizing on this combination of economy and flexibility, package designers have specified increasingly detailed, full-color reproductions of such hard-to-print products as cakes and other cooked foods, softly lighted figures and "thin" halftone backgrounds in pastel colors that could not have been handled by any economical process 10 years ago.

A typical, sophisticated example of the new lithographic art is a carton for six Helene Curtis "Candle Glow" permanent-wave kits (see illustration, p. 91) lithographed in 10 colors (six for background, four for the illustration). This package is not even a consumer package, but is designed for professional use and is seen by the public only on the shelf of a beauty salon. Specific types of permanents are identified by color coding on the top flap and back panel, and by a colored band around the three printed sides of the carton. The bottom flap carries nothing but crisp, black type in a useful tear-off, fill-in data card for customer records.

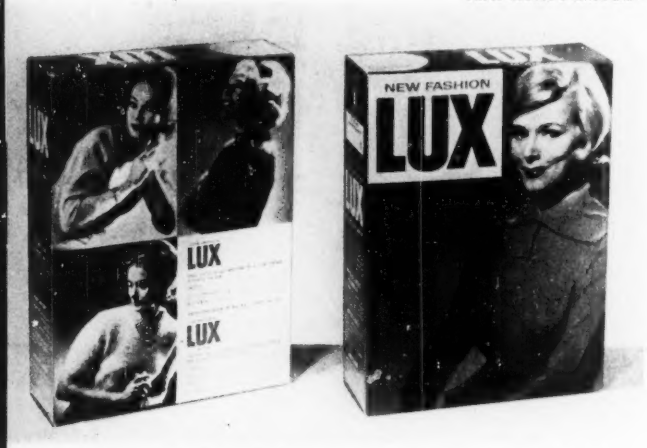
Packagers have registered in the past one major criticism of offset printing: uneven ink laydown. However, modern printers have made such strides in controlling carton-to-carton quality that at least one major lithographer with plants in various parts of the country now guarantees uniform reproduction no matter which of its plants prints it.

Rotogravure for long runs

In spite of its advantages, sheet-fed lithography still does not have the speed needed for such fine-quality, high-volume cartons as cereal and cigarette containers. In fact, one printing expert believes that recent advances in lithography have brought this process to a plateau and that the next wave of development will be in rotogravure printing—which has the speed required for packages used in great numbers, but also needs improved printing quality and more economical cylinders.

Now capable of running at rates up to 1,000 ft.

PHOTO COURTESY LEVER BROS.



Striking illustration *to win a competitive edge in a crowded product field can be obtained by introducing rich halftones for cartons where only simple surface design existed before. Such is the case with a new Lux soap package by Lever Bros. of Canada, which uses a dominant photograph on the front and three smaller halftones on the back, printed by three-color gravure, to give glamour and feminine appeal to this wash-day product. Cartons by Harding-Trini Gravure, Ltd.*

Rotogravure printing *offers quality and economy at high speed. Careful selections of design and colors in this process can create both subtle backgrounds and strong illustration as in this new outer liner for General Foods' new single-wall carton for Post Toasties. Printed in seven colors on 28-lb. kraft paper by GF's Carton & Container Div., this liner is wax laminated to paperboard for final carton. Paper by KVP Sutherland.*

COURTESY GENERAL FOODS AND KVP SUTHERLAND.

NEW FLIP-OUT SPOUT

Post Toasties
REG. U.S. PAT. OFF.

Corn Flakes

LARGE SIZE 12 OUNCES/*Net Wt. 340 Grams—K*

of paperboard per minute (compared with 350 and 150 ft. for letterpress and offset), rotogravure printing becomes the most economical process when orders of a single carton run into the millions.

Hand in hand with speed, rotogravure can be closely controlled while running, enabling uniform package quality. And while halftone detail is not as fine in this process as in lithography, it is quite satisfactory for many packages if care is taken in choice of design. Indeed, improvements in presses, techniques, inks and in paperboard surfaces have permitted increasingly detailed designs not considered possible a few years ago.

One new trick that boosts the speed of gravure printing and the quality of its reproduction is to print the package design on smooth-finish paper, which is then glue laminated or wax mounted on paperboard for the final carton.

Such a package is the new single-wall Post Toasties flip-spout carton, produced by the Carton & Container Div. of General Foods for its own Post Cereals Division (see insert facing p. 92). Printed on 28-lb bleached coated paper in seven colors (two yellows, two reds, two blacks and blue), this design features a soft background pattern of the General Foods Kitchens symbol. A strong, detailed reproduction of a bowl of cornflakes and an ear of corn are dominant halftones in 150-line screen. This paper is then wax laminated to a paperboard which has a second paper wax laminated on the opposite side. This multi-ply material is die cut into cartons that combine beauty, functional usefulness and barrier properties, all in a single-wall container. (For additional details on this significant new cereal carton, see "Linerless Carton—a Milestone in Cereal Packaging," p. 100, this issue.)

The main drawback to rotogravure printing has been the cost and time of making rolls and the impracticability of changing the design or copy once these chrome-plated copper cylinders are on press. Gravure printers and the independent engravers who generally make the rotogravure printing rolls have been acutely conscious of this disadvantage and they are trying to overcome it.

Faster engraving processes and lower-cost materials for rolls are the subject of intensive research, both in this country and abroad, and may develop within the next few years. Meanwhile, various routing and filling processes have been devised to permit minor changes in copy or corrections in design and to speed up the initial process of engraving so that rotogravure may compete in smaller press runs with other printing techniques. Also, there is now a trend toward combining rotogravure presses with flexographic units (used heretofore mainly in film printing) to achieve the flexibility for carton work

PHOTOS COURTESY ANDRE PAPER BOX.

Inexpensive effects, *such as the apparent halftone on these multipack carriers for Belfast soft drinks, is achieved with line-tone flexography. Offering strong ink laydown, this rubber-plate printing technique is low in cost, but capable of combining bold, solid areas with shaded vignettes, which are actually created by a series of horizontal lines of varying thickness, as in close-up at right.*

Silk-screen technique *is gaining for effects such as this. Seven brilliant colors on a gold paperboard background are achieved by silk screen to decorate this Myers' rum gift carton. Incorporating three fluorescent dyes, the Jamaican design's strong merchandising impact is rendered non-commercial on removal of trade-name band of opaque cellophane. Cartons by Color Reproductions, Inc.*

Multihued design *is created from only a few colors by using transparent dyes and overprinting techniques. This corrugated carton for toys, with a pre-printed liner, has a vivid scene in full color derived from only four letterpress inks. The pre-printing method enables finer detail and also prevents crushing of the corrugations. Carton by St. Regis Paper.*

more roses, larger blooms
A simple program of rose care developed by Scotts, America's lawn authority
Brings new success to home gardeners – beginners and experts alike
Scotts

Smooth surface *on corrugated board is achieved by letterpress pre-printing of the outer liner before it is laminated to the board, thus eliminating the usual ribbed effect. Carton by St. Regis Paper.*

Trial runs *by silk-screen printing are gaining popularity for prototype cartons used to compare color combinations or market test a new package design. This four-color stock carton (shown also in photo on p. 89) utilizes heavy ink laydown of silk screen to contrast to gleaming foil lamination, embossed after printing.*

PHOTO COURTESY REYNOLDS METALS

that is lacking in the rotogravure process alone.

This discussion has been concerned only with roll-to-roll gravure printing. There is, of course, sheet-fed gravure, which is a much slower process that is mainly used for commercial printing and for a few packaging applications, such as in wraps for set-up boxes, where extra-high quality—not speed—is the primary requirement of the job.

The rubber plates used in flexography, which is really a specialized form of letterpress, are one of the least expensive printing devices available today. And though fine-screen detail is not yet generally available with this printing technique, flexography has definite advantages in solid color printing that necessitates a heavy ink laydown.

This advantage will be broadened with development of a new halftone flexographic process, utilizing an elliptical dot that enables up to 100-line tone printing. This advance, which is still in the experimental stage, may give greater impetus to the present trend to flexography.

The combination of flexography with rotogravure printing is so new that many large printer-converters are only now installing the necessary press equipment. The combination technique takes advantage of the best features of both processes. Halftones can be printed in fine detail by gravure. Strong, solid design elements and lettered copy can be added by flexography and, if changes in copy are necessary, the flexographic plates can be quickly remade at little cost and mounted on the printing cylinder in minutes. Cartons using this combined method extensively will shortly be on the market.

While experimenting [*Continued on page 214*]

Lightweight-cellophane wraps

The work-horse cellulosic films are back in the battle for low-cost honors following increases in yield value that produce savings of up to 16% for a broad line of Zaffere's baked goods

Once again, cellophane producers have proved it is a mistake to underrate this versatile material in the fight between cellulosics and thermoplastics for a competitive edge in vast packaging markets. At the recent AMA Packaging Show, the three principal cellophane manufacturers unveiled several new lightweight grades. One manufacturer showed six new films that are fractionally thinner than previous films of these types. Tiny though this difference may be, it has boosted the yield of five films 1,000 sq. in. per pound and one film 4,000 sq. in. and has reduced cellophane costs in a range from 5 to 16%.

An example of dramatic improvement in both yield and price can be noted in a new and thinner high-barrier polymer-coated cellophane now being used by Zaffere's Bakery, Federalsburg, Md., for wrapping a broad line of breads, tray-packed and plain rolls, and sweet goods. This film is only 0.8 mil thick compared with the previous 0.9-mil standard used by bakers. Its yield is 25,000 sq. in. per pound, as opposed to the previous 21,000 sq. in. Cost is 3.16 cents per 1,000 sq. in. vs. 3.76 cents.

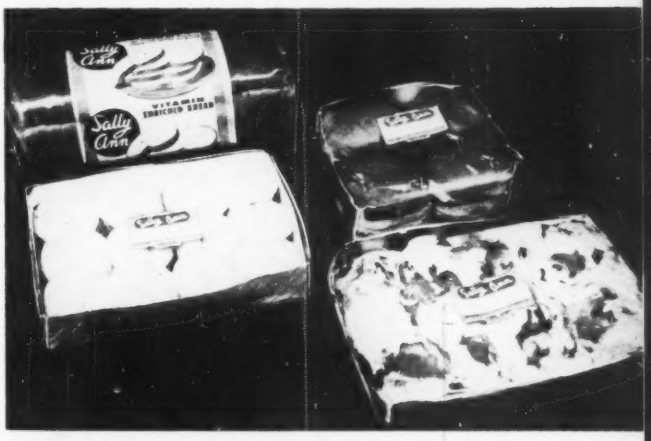
According to spokesmen for Zaffere's, which had used standard polymer-coated film since its introduction in 1953, the lightweight cellophane is easy to run and, in fact, heat seals better than previous materials. Shelf life for this baker's goods wrapped in the new film is as long as for those wrapped in thicker cellophane, too, it is said.

The new film transmits heat faster and the reformulated coating softens more quickly, according to spokesmen at Zaffere's.

Otherwise, the cellophane producer will say only that improvements in the film are the result of three evolutionary improvements in manufacturing, handling and molecular structure of cellophane.

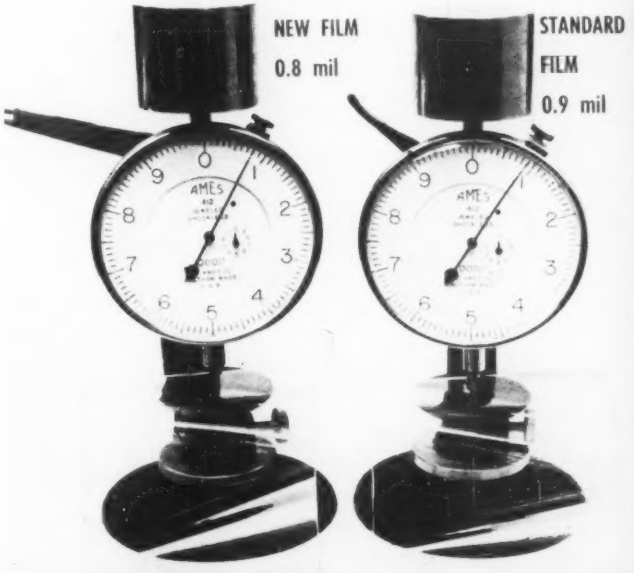
While the supplier recommends this particular film only for use on bread-wrap machines, due to its slightly lower rigidity, Zaffere's is satisfied with it for all wraps. This success appears to stem from the modern wrapping equipment being used and the high skill of the bakery's operating personnel.

SUPPLIES AND SERVICES: "K" cellophane 250-201 by Du Pont, Wilmington 98, Del.



Full protection *to a wide range of baked goods in several types of wraps is provided by new 0.8-mil polymer-coated cellophane used by Zaffere's Bakery, Federalsburg, Md. Because of its thinner gauge, new film is said to seal more readily in either direct wraps, or in tray or ewraps.*

Tiny difference *in gauge—1/100th mil—is detectable only by a sensitive instrument, but for this polymer-coated material, it increased yield 4,000 sq. in. per pound and cuts material cost for the company by 16%.*



The squeeze is on

Compression packing cuts Kleenex box size in half without reducing contents. Benefiting packager, dealer and consumer, it represents a brave attack on the growing shelf-space problem

In a bold and timely attack on a packaging problem of broad national significance, Kimberly-Clark's Kleenex facial tissues now are appearing on retail shelves in a completely redesigned folding box that is only about half the size of the former container — yet holds exactly the same number of tissues.

The technique involved is compression packing, a mechanical bulk-reduction technique during filling that appears to be catching hold among packagers of compressible paper products. Chicopee Mills also is applying this principle to halve the size of its consumer package for Chux disposable paper diapers.[1] The process offers benefits (1) to the packager (in the form of material-cost savings as well as storage and shipping economies), (2) to the space-crowded retailer (who can stock twice as much in the same shelf area and thereby double his profit potential per square foot) and (3) to the convenience-minded consumer (who finds the smaller box easier to carry home, to store or to pack for travel.)

This move by a product so outstanding as Kleenex is extremely significant because it goes exactly counter to a standard approach in packaging: to make the container look as big as is reasonably possible. A basic reason for reversing the approach is, of course, the growing pressure from retailers (and also, to some extent, from consumers) as an aid to conserve their shelf space.

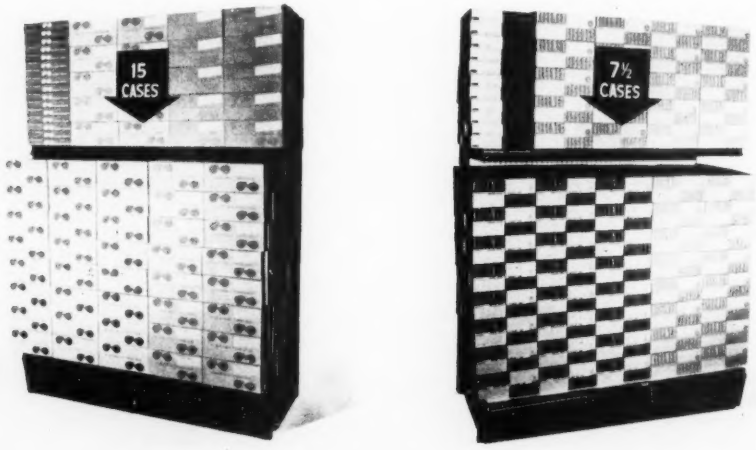
And — although this apparently had nothing to do with the decisions by Kleenex and Chux, which were made some months ago — looming over all is the recent Government campaign against packages that are excessively large for their contents.

Many a packager today wonders how he can reduce the size of his selling package without creating the impression that he is giving less for the money.

When Kimberly-Clark decided to halve the depth

[1] See MODERN PACKAGING, June, 1961, p. 125.

Dealer appeal *of the smaller box is illustrated graphically, by these two island displays. The same space used to stock seven and a half cases of the former box now accommodates 15 cases of the compression-packed box, thus doubling the retail-store's profit potential per square foot of space. Note distinctive new surface design.*



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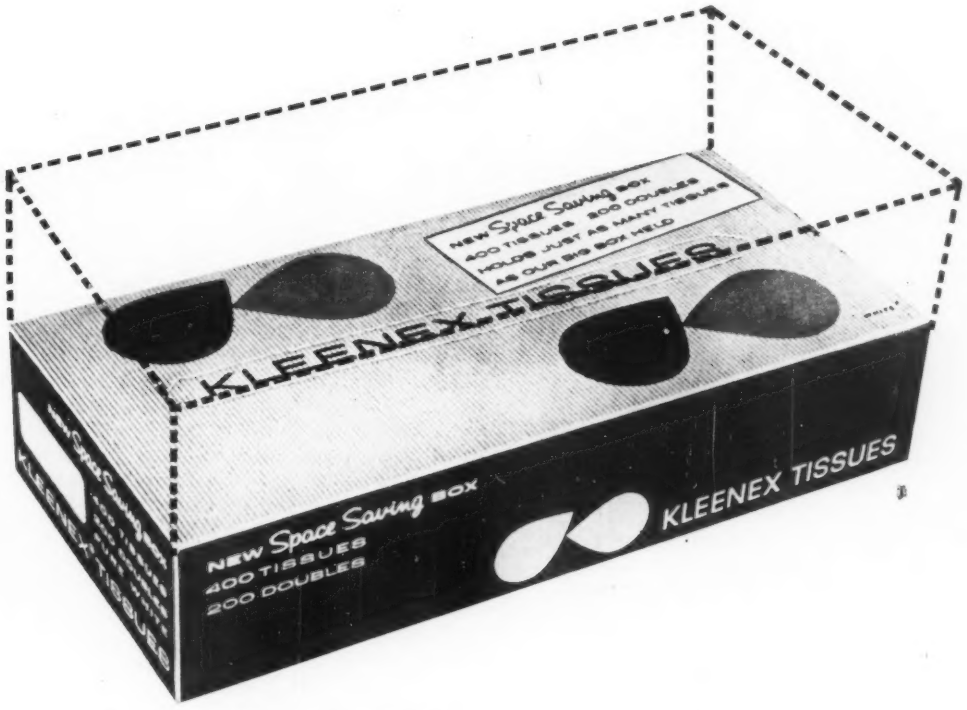


Half size, same content *results from compression packaging of Kleenex. Copy on package and in advertising helps educate consumers to fact that new space-saving box results from "squeezing out the air" in former container (dotted lines). Blue pinstripe-patterned background aids carry-over identity.*

of its 200- and 400-tissue Kleenex boxes while keeping other dimensions of the container the same, it was faced with this very question.

The solution, as Kimberly-Clark saw it, could best be achieved by a completely new package-surface design emphasizing that the smaller box contains just as many tissues as its predecessor and by consumer education in mass visual media.

Kleenex's traditional Mondrian motif has been modified in the box redesign. The dominant design element on the new package is an arresting new logotype consisting of two teardrop shapes positioned to form a stylized letter "K." Calling attention to the container's major convenience feature, the phrase "*new Space-Saving box*" appears prominently on all panels. An additional and vitally important design element is a rectangular, reverse-printed block in the upper right-hand corner of the top panel. Copy here carries the "space-saving" theme plus the information that the smaller container "*holds just as many tissues as our big box held.*"

For carry-over brand identification, the new package design retains the familiar Kleenex blue-on-white pinstripe-pattern background on the top panel. Solid side-panel background colors are keyed to the pastel tints of the tissues inside.

Kimberly-Clark also is using print and television advertising to inform consumers about the smaller box and to stress why the size has been changed. The compression-packing process is explained in such simple terms as: "*We squeezed out the air to put more tissues in less space.*" The difference in package sizes is illustrated by direct visual comparison, on the carton, of the old and the new.

The success of this company's bold merchandising move in replacing a larger package with a smaller one—at no change in contents or price—is reflected in customer response and market expansion. Kimberly-Clark began to distribute the space-saving box on a cautious five-city test basis last summer. So enthusiastic has been dealer and consumer acceptance, says the packager, that plans for national distribution are now well under way.

The company reports also that it is studying the practicality of extending the compression-packing process to other compressible products in its line.

SUPPLIES AND SERVICES: Redesign by Morton Goldsholl Design Associates, 201 N. Wells St., Chicago 6.

Child-height display stand

In launching its first retail product, a clown-design drinking cup for children, Arrow Housewares Products, Inc., Chicago, says it is "paying attention to market height rather than currently popular 'market depth' concepts." Its circus-type drum display stand for "Hobey the Clown" cups contains an inclined tray positioned just 22 in. off the floor, designed for appeal to small fry. Made for retail outlets subject to heavy traffic by toddlers, the easily reached tray is topped with a die-cut header picturing a large face of a clown whose nose is a red balloon. The display is shipped in a compact corrugated carton with six dozen cups. The vivid colors were printed on four-color presses for corrugated materials. To compensate for difference in stock color between the corrugated board and bleached white board for the header, the supplier's engineers varied inks as necessary to achieve an exact color match. A special lock holds the header upright. According to the company, the new promotion has been so successful that production of cups is lagging behind orders. *Display and shipping carton by Stone Container Corp., 360 N. Michigan Ave., Chicago. Artwork by Benolken, Douglas & Minnich, 450 E. Ohio, Chicago.*

Ideas in Action

Linerless carton—a milestone in cereal packaging

The new Post Toasties package being introduced by the Post Cereals Div. of General Foods marks a milestone in cereal packaging and will be of interest to all packagers of highly hygroscopic products who are seeking a simplified, single-barrier carton. The new three-ply cartonboard, developed by GF's own Carton & Container Div. after five years of research, incorporates wax on either side of the center ply and provides such an effective moisture barrier that no liner or overwrap is required. This is believed to be the first carton successfully to hold a flake cereal without the use of an interior liner.

Also of interest is a convenient corner pour spout. The user simply lifts a tab on the top of the box, pulls open the spout, pours out cereal and then recloses the package by lifting the tab and pushing the pour spout down until it locks. The new package, General Foods says, provides more product protection than the standard cereal package prior to opening and almost twice as much protection after it has been opened. (For further details on the printing production of this linerless Post Toasties carton, see "Shifting Trends in Printing," p. 89, this issue.)

Handy pain extinguisher

A container that dramatizes product use quickly is a polyethylene squeeze bottle in the shape of a miniature fire extinguisher for Norwich Pharmacal's new "pain extinguisher," Unguentine First-Aid Spray. The basic concept could be adopted by packagers for a variety of many other types of specialty items.

The 5¼-in.-high container, holding 2¾ oz. of the medication for the treatment of cuts, scrapes, burns and sunburn, is blow molded of red-colored polyethylene in the exact shape of a familiar fire extinguisher, with a white polyethylene closure in the form of a control-wheel valve, to complete the over-all effect.

The screw cap may be removed in the normal way to reveal a white spray plug with molded-in arrow for convenience in indicating the direction of the spray when the bottle is squeezed. Silk-screen printing of trade and product name in white is arranged to further the realistic effect of the container shape. Directions for use are similarly printed on the back of the colorful plastic container.

In addition to giving a visual indication of product use, the unusual package is designed to spark self-selection sales.

Unguentine First-Aid Spray was introduced in the novel container early this year and is available in most drug stores. According to the company, it has had exceptionally fine acceptance on the part of the trade and is creating a great deal of comment wherever it appears. It has been supported by color advertising illustrating the container in 12 leading consumer magazines and it has also been featured on network television and radio. *Squeeze bottle and components by Wheaton Plastics, Mays Landing, N.J.*

Straw opening on tetrahedrons

Quality Chekd dairies have adopted a new convenience for easy access with a straw to contents of tetrahedron-shaped containers of polyethylene-coated paper. This refinement, designed to make these milk containers more effi'cient for school lunch programs, is accomplished by special attachments on the standard machines that form, fill and seal these four-sided containers from roll stock. As the roll of material moves through the machine, a die-cutting device punches a hole positioned near the top of the finished container while other attachments cover the hole with a thin polyethylene membrane on the inside and seal the outside with a piece of pressure-sensitive paper tape. Access is a simple matter of lifting the pressure-sensitive tape and pushing a straw through the thin membrane. The Swedish firm which developed the equipment for the tetrahedron-shaped container envisions wide acceptance in U.S. school feeding programs with the addition of the straw-dispensing feature. *"Straw Seal" Tetra-Paks by Tetra-Pak Co., Union, N.J. Polyethylene coating of the paperboard produced on automatic extrusion equipment which is manufactured by Frank W. Egan & Co., Somerville, N.J.*

Plastic bottles *blow molded of high-density polyethylene do not break—a strong selling point with pharmacists. Among Lilly's new plastic bottles, certain items such as Spiritex are silk-screen labeled. Other items in the line use paper labels.*

Polyethylene bottles have reached a new and significant stage with their adoption by Eli Lilly & Co., Indianapolis, as a basic package for ethical pharmaceuticals—the most practical container available for many of its major products. Three years of stringent testing have now been completed. Hospitals and drug stores all over the United States will soon be receiving shipments of Lilly pharmaceuticals packaged in blow-molded, high-density amber and natural-color polyethylene bottles.

Polyethylene's resistance to breakage is an important factor to nearly all packagers who have made the switch. To Lilly and its customers, for whom breakage has always been an especially vexing and expensive problem, polyethylene is now providing a solution. In addition to their nonbreakability, the polyethylene bottles weigh about one-tenth as much as their glass counterparts.

Already more than 40 different Lilly items are in polyethylene bottles. More will follow. Since bulk packaging had the greatest breakage incidence, the majority of products converted to polyethylene so far are those in 750-cc. or larger bottles. Lilly expects to have most of its dry-pharmaceutical line bulk packaged in polyethylene bottles with metal caps by the end of 1961. Seven of the dry products are also being marketed in metal-capped, 160-cc. polyethylene bottles. And four liquids are now in polyethylene bottles. Greater use of all such bottles is forthcoming as Lilly's package conversion to plastic materials expands.

This project is significant because pharmaceuticals require extreme care in packaging. Changes in containers for these ethical drugs can never be made without extensive testing, particularly when they involve a basic change of packaging material. Hence, introduction of Lilly's polyethylene bottles on a national scale climaxes the most painstaking research and one of the first package test-marketing programs in Lilly history.

As far back as 1958 Lilly had suspected that polyethylene could mean worthwhile manufacturing savings as well as improved user convenience. The company was definitely not anti-glass; the material had been its main work horse for years and would undoubtedly continue to be used widely. But polyethylene's notable progress could not be ignored.

Before plastics could be seriously considered,

Here is the full story of three years of research which have turned this drug maker to high-density polyethylene bottles for purely practical reasons. The findings have broad applicability

moves to plastics

however, the company had to have positive answers to several compelling questions:

Would polyethylene bottles give adequate product protection? (And Lilly's "adequate" standards are necessarily very high.)

Could they be used for a sufficiently wide product range to make them economically feasible?

Could they be handled on existing equipment?

Could they be handled efficiently in storage and also during shipment?

Would they be acceptable to users?

Despite supplier cooperation, these questions could not be answered in advance because no one had the answers. No pharmaceutical manufacturer had used polyethylene bottles before for these types of products, nor to the extent Lilly proposed.

Early stages

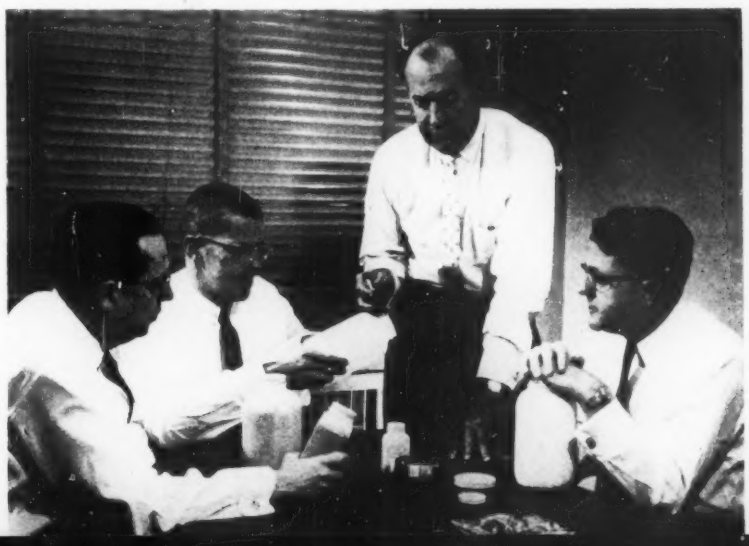
Lilly's polyethylene packaging program is worthy of step-by-step study by all packagers. This special report to MODERN PACKAGING marks the first time that this highly respected packager has publicly divulged a packaging program in such full detail.

While Lilly had been aware of polyethylene's potential for some time, it was decided early in 1958 that testing procedures should start at once if Lilly was to be the pioneer in this field and gain the advantages of leadership.

The exploratory project was under the general direction of the Packaging Dept. and the Production Methods Dept., but was assigned for study to Package Development. Two other departments, Package Design and Production Methods & Layout, were to be actively involved with the project before long. But for the time being, Package Development was doing the investigational work.

Its first move was to contact, through the company's Purchasing Dept., four leading suppliers of polyethylene bottles. All four of the suppliers were asked to submit drawings of two much-used bottle sizes: 60 cc. and 160 cc.

Since Lilly suspected in advance that neither low-density nor medium-density polyethylene could provide enough resiliency or a sufficiently low water-vapor transmission rate, the four supplier



Lilly's development team *spent three years on its repackaging project. Left to right: Carl B. Burnside, manager, Package Development Dept.; Robert H. Werdon, manager, Package Design Dept.; Braxton E. Jeffries, chief, package development, and Ralph M. Townsend, chief, dry products package design.*

companies were asked to duplicate as closely as possible in high-density polyethylene the shape of the company's existing glass bottles.

From the start Lilly realized that even if the polyethylene-bottle experiment worked out well, some products would continue to need glass packaging. *It insisted that no polyethylene bottle design be adopted unless it could be filled and capped on the glass-packaging line with a minimum change of parts.* In fact, Lilly's new plastic bottles generally duplicate existing glass shapes and sizes.

When first prototype bottles were received in the summer of 1958, Lilly's own laboratory technicians ran extensive product compatibility and stability tests. From these results there was drawn up a preliminary list of products which could and which could not be packaged in polyethylene.

Glass-bottle shapes *(rear row) are retained in new plastic containers for purposes of recognition and production-line facility. Only the tall, slim Spiritex bottle was redesigned for easier handling. Tests showed that some products in amber glass could go into natural-color polyethylene without product damage.*

Production testing

At this stage Lilly orderd 500 each of natural-color and amber polyethylene bottles for use by the Production Methods & Layout Dept., which then put them through a rigid series of washing, filling, capping and labeling tests.

First results were not completely satisfactory, but most adjustments were relatively simple:

When the cottoning machines caused the bottles to bow, pressure was reduced with good results.

Metal guides used on the bottle conveyors left marks on the polyethylene bottles. This problem was overcome by adjustments to the conveyor.

Regular bottle-capping equipment with proper change parts worked satisfactorily.

At all times packaging personnel kept in mind the fact that glass and polyethylene had to run interchangeably on the same line.

Labeling posed the biggest problem. With ethical pharmaceuticals, the label must adhere tightly until the product has reached the hospital or pharmacy; then it must be easily removable because the druggist frequently wishes to replace it with his own prescription labels. Heat-sealed labels did not meet this criterion. After checking many possible adhesives, Lilly finally settled on a cold, water-soluble type which was suitable for standard labelers, adhered to both polyethylene and glass, and could be soaked off. Many Lilly prescription products are paper labeled, using a water-soluble adhesive. Lilly uses printed bottles for such items as its Spiritex rubbing alcohol, Lotion Surfadil and Tincture Merthiolate. These generally go directly into customers' homes without repackaging by the pharmacist, so there is little need for label removal. For these products Lilly uses silk screening.

While all production tests were going on, Package Development was running its second series of compatibility tests. The Physico-Chemical Dept. subjected bottles to various light-transmission tests. An evaluation of plus and minus qualities of polyethylene vs. glass was set up with 48 points cited.

All results were promising enough to continue the program. Two diverse products were selected for further intensive study. Compren, a prenatal

Exhaustive lab tests *were run on the resistance of polyethylene to extreme heat and cold. Here, a Package Development engineer checks sample bottles after long storage at 100 deg. F.*

dietary supplement, is a non-prescription item in gelatin capsule form and is not light susceptible. It went into natural-color polyethylene bottles. Valmid is a compressed tablet sold by prescription only and susceptible to light damage. It was currently in amber glass and Lilly felt sure it would continue to need light protection even in plastic. It finally went into amber polyethylene.

In December, 1958, Lilly packaging people and supplier personnel held a lengthy meeting to iron out such details as method of incoming pack for the bottles, whether or not sunken label panels were necessary (they weren't), uniformity, flame treatment, adhesives, inner seals. It was the last chance for a major change except at great expense.

Lilly considered whether cap liners could be omitted because of the resiliency of the polyethylene bottle. However, it decided on a lined metal cap as a safety measure because polyethylene bottles, though produced to strict tolerances, did not always have absolutely uniform closure finish.

Cost

Until now Lilly had been primarily concerned with polyethylene performance. At this point it was necessary to evaluate the economics. These were determined to be within an acceptable range.

The new package was now ready to leave the Package Development Dept. and move into a more advanced stage under the direction of the Package Design Dept. Enseals, a coated tablet, joined the Valmid compressed tablets and the Compren gelatin capsules in the testing line-up.

Market research study

Lilly was now convinced it was traveling in the right direction. It could handle polyethylene-bottled products, it could afford them, they performed well. But probably the most important point was still obscure. Would users like them? Management authorized a market-research study by an outside consultant. With as much secrecy as possible, interviewers contacted pharmacists, doctors, hospitals and wholesale drug outlets at strategic spots throughout the country. They asked many questions:

What are your reactions to plastic bottles?

Would you be afraid that a product was less stable in a plastic bottle?

Do you think you're getting less product when it is packaged in a plastic container?

Would you like a bulk package in plastic?

What about suitability of liquids in plastic?

How about label removal?

As anticipated, the favorable reaction was not 100% unqualified. The survey turned up questions regarding the polyethylene bottles, but favorable reaction was much greater. Respondents were impressed with the unbreakability feature of the new bottles. They liked their light weight, considered them less expensive, thought—interestingly—that they held *more* than glass.

Market surveys *included several hundred interviews with pharmacists, hospital personnel and wholesalers to gauge acceptance of new polyethylene bottles. Most reaction was highly favorable.*

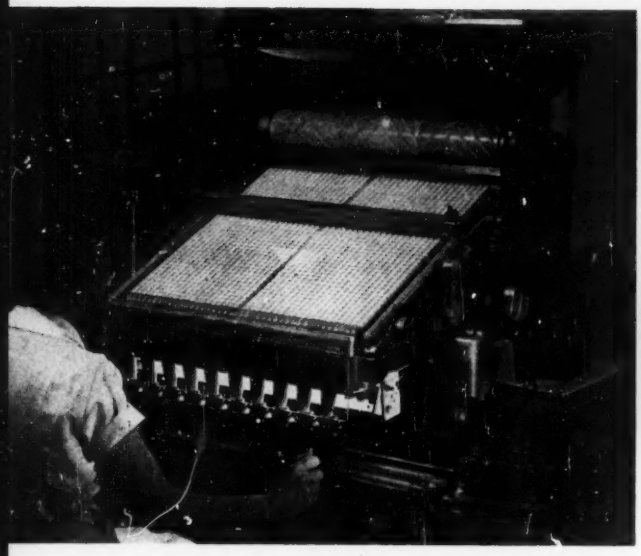
The unbreakable feature was so popular that Lilly added a copy line to the bottle caps: "New, lightweight plastic bottle—unbreakable."

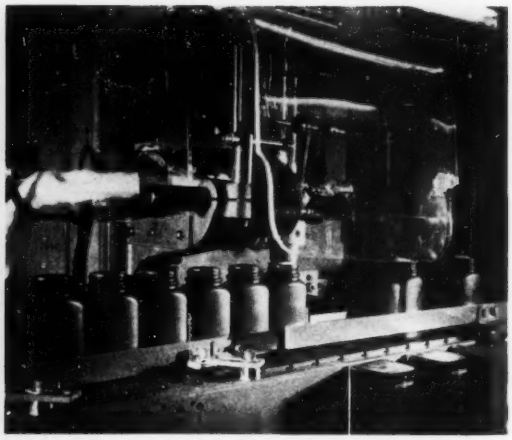
As a result of the study showing that users were unanimous in their desire for bulk sizes, the Package Design and the Development departments went into high gear to work out details on these much-desired 750-, 1,500- and 2,000-cc. bottles. Meanwhile, final specifications for the 160-cc. bottle were established and the supplier was notified to proceed with making of the production molds.

Test marketing

The new packaging concept was now ready for test marketing. Lilly's package research had, of course, always been thorough. But in the past, once a package change had been approved by the company's management, it went immediately into national distribution. The implications in the switch to polyethylene were so great, however, that Lilly decided test marketing was advisable. A marketing area was plotted which would encompass all U. S. climatic differences and both urban and rural areas.

By June, 1959, the extensive method-of-pack survey was completed and the most efficient proposal





Standard equipment *with only slight modifications handles polyethylene bottles, which have been so designed that containers of either glass or plastic can be run interchangeably on the same line.*

was chosen. Lily instructed all of its suppliers to ship the polyethylene bottles to its various plants in trays, in line, four tiers deep.

A complete list was issued by the company's testing lab, specifying products which could be packaged in either natural-color or amber polyethylene. Since the amber carries a price premium, it was to be used only when necessary. Lilly found that the translucence of natural-color polyethylene gave sufficient light protection for a number of its products which previously had been packaged in amber glass. A few very light-susceptible products, however, required amber-color polyethylene. The number of products for which polyethylene was suitable — either natural or amber—turned out to be much larger than expected at the start of the program.

An economic analysis of bulk bottles was completed. This determined that the use of bulk bottles was also within an acceptable range.

Production

At last it was time to notify wholesalers and salesmen in the test-market area that the plastic-bottled products would soon be forthcoming. And in October, 1959, the first shipment of Compren in natural-color, 160-cc. polyethylene bottles was dispatched to Boston for general sale. Shipments of Compren to the other test markets followed immediately. Valmid in amber polyethylene was released within several months, followed by Enseals.

The Production Methods & Layout Dept. reported on first production experience with the new bottles. The report was satisfactory. Materials handling, bottle cleaning, filling, cottoning, capping, labeling had all performed well from the start of the run. The thorough and extensive evaluation program was producing good results.

All through 1960 testing continued while the company's first polyethylene-bottled products were actually on sale in the test markets.

Results of new adhesive studies of flame-treated and non-treated bottles were not so encouraging as other tests had been. Labels would simply not adhere to bottles without flame treatment and no method has since been found to replace flame treatment. The Lily people consider this difficulty to be only a minor drawback, however.

In October, 1960, the Lilly laboratories conducted satisfactory fadometer (accelerated ultraviolet exposure) tests on both the natural-color and the amber polyethylene bottles.

Meanwhile, reports and sales results were coming in from the test markets. All were gratifying. Most people don't take the trouble to comment on packaging and Lilly salesmen were expressly told not to sell the products on [*Continued on page 214*]

SUPPLIES AND SERVICES: Polyethylene bottles by Continental Can's Plastic Bottle & Tube Div., 2930 N. Ashland Ave., Chicago 13; Imco Container, 75 and Cleveland Sts., Kansas City 30, Mo.; Wheaton Plastics, Mays Landing, N.J., and Plax, P. O. Box 1019, Hartford, Conn. Caps by Armstrong Cork, Lancaster, Pa.; Phoenix Metal Cap, 2444 W. 16 St., Chicago 8; Wheaton Plastics, and Owens-Illinois Glass, Toledo 1. Market research by Elrick & Lavidge, 20 N. Wacker Dr., Chicago 6.

'DECEPTIVE PACKAGING'

What is it? What's to be done?

So-called "deception" in the packaging, labeling and advertising of consumer products suddenly has exploded into an issue of national importance and headline prominence. It is under a heavy criss-cross of fire from vociferous and well-organized consumer groups, from Federal enforcement agencies with expanded policing powers and with more money to implement them, and from a Senate investigative committee whose public hearings have been making front-page news across the country.

Make no mistake about it: The deceptive-packaging situation is of immediate concern to virtually every manufacturer who packages a product for sale in the nation's retail stores. Nor can the new pressures that are accumulating be laughed off as unimportant or dismissed as just another case of the sins of the few being visited on the heads of the many.

There is far more involved here than the simple matter of exposing a handful of practitioners in deceit. Under serious investigation are long-standing packaging and labeling practices which are rooted not in fraudulent intent, but in the economical and physical limitations of packages and packaging-line operations, and in the honest necessities of competitive survival.

In short, packagers are on a spot which, for the most part, appears to be not of their own making.

The multi-faceted thrust against deception in its various forms is being marshaled from Washington, D. C. Here is a quick rundown on what is happening in the Capital and what U. S. packagers can expect:

• The Senate Antitrust and Monopoly Subcommittee is conducting a series of public hearings to probe "deception in packaging and labeling." Purpose of the hearings, which opened with a three-day exploratory session late in June, is to determine whether shoppers can make a rational choice among competing products on the basis of an examination of the package and its label. Later in the year there will be hearings to inquire into specific "deceptive" practices, with policing legislation looming as a possibility.

• Under the impetus of an increased monetary allocation, the Food & Drug Administration has begun a stepped-up drive against such deceptive-packaging practices as slack fill, "oversized" containers and inconspicuous or ambiguous mandatory label information on food, drug and cosmetic packaging. The agency's current — and still unresolved — legal battle in the Delson Mints case* is a significant indication that F&DA not only may now have the weapons to wage an all-out war, but is determined to go down the line to obtain definitive judicial interpretations of the deception clauses in the Federal Food, Drug & Cosmetic Act — and to follow up any deceptive findings with prosecutions.

• The Federal Trade Commission, newly re-organized to streamline and speed up its enforcement activities, also is embarked on a broadened campaign against deceptive practices, involving any product shipped in interstate commerce. Although FTC's major interest in the area of deception is in advertising media, it also guards against deception in packaging in fields not monitored by F&DA — which means everything other than foods, drugs and cosmetics.

Taking them all together, these activities (each of which will be discussed in more detail on the pages that follow) signify a clear expression of sharpened Federal watchfulness regarding existing or potential areas of deception in the packaging of consumer goods.

Where will it all lead?

At the most, it can culminate in more severely restrictive legislation that might necessitate costly change-over and compliance procedures by packagers in almost every product field. It raises the old bugaboo of "standardized packaging" and "grade labeling" — thought to have been laid to rest 20 years ago.

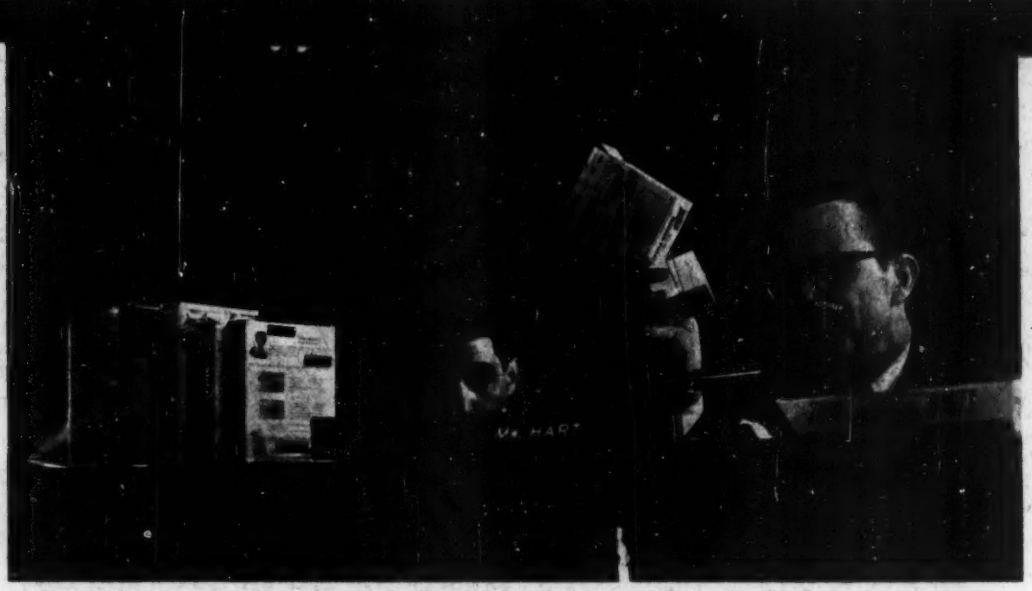
At the least, it is already an unmistakable warning that the merest hint of hoodwinking in packaging or labeling — however innocent the intent — is more than ever vulnerable to consumer suspicion and investigation by Federal enforcement agencies.

The questions that naturally follow: What constitutes packaging and labeling deception under present law and how can a packager be sure that the container he is using will not be the object of suspicion?

Our investigation

In an attempt to find answers to these and other questions arising from the suddenly broadened probes into packaging, MODERN PACKAGING editors talked in Washington with authorities at F&DA, FTC, the Senate Antitrust and Monopoly Subcommittee and the Office of Weights & Measures. Their combined opinions indicate

*See "Editorial Memo," MODERN PACKAGING, May, 1961, p. 85.



Packages under suspicion *as "deceptive" are displayed by Sen. Philip A. Hart at public hearing in Washington as the Senate Antitrust and Monopoly Subcommittee launches full-scale investigation into consumer-goods packaging and labeling practices.*

that the major targets at which exposure and corrective action are being aimed include the following:

- Slack-fill packaging.
- Inconspicuous placement of required label information (such as net weight).
- Excess package cushioning.
- Packages that are "larger than reasonably necessary" to protect their contents.
- The use, by competing manufacturers, of same-size packages containing varying product weights.
- The practice of odd, fractional-ounce weights which differ from one company's package to another's and make it virtually impossible for shoppers to calculate accurate cost-to-weight ratios.
- Introduction of "new" packages which are the same size and same price as before, but which contain less product and which do not provide an easily visible statement of content reduction.
- Misleading label information as to the number of "servings" in a food container.
- Confusing and sometimes contradictory use of such adjectives as "giant" and "jumbo."
- "Economy-size" packages that are sold at an equal or higher price per ounce than the regular size.

It is apparent, from talking with Federal officials and from inspection of an exhibit of packages gathered by the Senate subcommittee, that implications of deception are being leveled at virtually all standard forms of packaging. However, from a purely physical standpoint – disregarding labeling – indications are that any transparent package is reasonably free from attack. Apparently, if you can see the contents, you can't be deceived.

The law

All the Government can say at this time to packagers who want to know exactly how they can avoid being nailed on a deception charge is simply: Abide by the rules in the Food, Drug & Cosmetic Act (even if your product falls outside these categories). Although the language of the act is open to administrative interpretation – which is the cause of much of the trouble and which is why F&DA is battling hard for definitive judicial interpretations – a package may be regarded as deceptive if it is "so made, formed or filled as to be misleading" to the consumer, or if its "labeling is false and misleading in any particular."

On the first point, F&DA's chief legal weapon was blunted temporarily – but only temporarily – when Newark (New Jersey) District Court on June 26 reaffirmed its original decision that the Delson Mints carton is *not* deceptive as to the amount of candy it contains. F&DA has made it clear that it will carry the issue to the Supreme Court and that it expects to win.

A later clause on labeling in the food law is pregnant with possibilities for misapprehension: A package is deceptive, according to the law, "if any word, statement or other information required by or under authority of this Act to appear on the label or labeling is not prominently placed thereon with such conspicuousness (as compared with other words, statements, designs or devices in the labeling) and in such terms as to render it likely to be read and understood by the ordinary individual under customary conditions of purchase and use."

Exactly what constitutes a package that is "so made, formed or filled as to be misleading?" Final resolution of the Delson Thin Mints case may go a long way toward helping to clarify that point.

What, in labeling, are the limits within which a packager can comply with the requirement that mandatory data appear "in such terms as to render it *likely* to be read and understood by the *ordinary* individual under *customary* conditions of purchase and use?"

These are the key questions.

The answers, it seems, are harder to come by. But, in the words of John W. Harvey, Deputy Commissioner of the Food & Drug Administration:

"The packager's own good judgment, within the framework of the law, is his best defense against a possible future charge of deception in packaging or labeling."

The solution, obviously, is not quite so simple.

What, for instance, is the status of packaging that is "slack filled" not by fraudulent intent, but by necessity (such as plastic squeeze bottles that require air space for proper function, aerosol containers which are charged with space-occupying propellant and dry cartoned products that settle in transit)?

What about self-selection packaging that has to be – by the retailer's demand – made oversized to protect small items against pilferage?

And what effect will the new signals on deception have on the distinctive and often "non-commercial" label designs in which packagers invest considerable money in order to help their products compete at the marketplace with a shelf load of similar products? The trend to "clean, uncluttered design" has been a big factor in relegating mandatory data, including the contents statement, to small type usually on the back label.

At this point, it is virtually impossible to predict exactly what is likely to emanate from all the new interest in "deceptive" packaging. But a closer examination of current and continuing activities should give consumer-products packagers a broad indication of the practices that are or are not under investigation and of developments that are expected in the days ahead.

WIDE WORLD PHOTO

Vociferous testimony *at opening Senate hearing was restricted almost exclusively to consumer viewpoints. Typical of the character of the hearings were attacks on "packaging abuses" by Dr. Persia Campbell (left), head of the economics department, Queens College, and Sen. Maurine Neuberger (D., Ore.).*

The Senate hearings

The Senate Antitrust and Monopoly Subcommittee's hearings have the stated objective of determining the extent of deceptive packaging and labeling among products sold in the nation's supermarkets. The investigation, under the direction of Sen. Philip A. Hart (D., Mich.), opened with a three-day session, June 28-30, designed "to select for study those areas of abuse where we can most reasonably expect that legislation will be helpful."

The broad scope of the investigation, reportedly prodded by consumer complaints, is to determine whether packages and labels give shoppers a false or confusing impression of the quantity and price of products. Sen. Hart told MODERN PACKAGING, in advance of the hearings, that the investigation is being conducted as much for the benefit of the overwhelming majority of honest packagers as it is for consumers.

"Too often," Sen. Hart pointed out, "we see the manufacturer of a product penalized for a forthright declaration of package content, while his competitor gains a trade advantage by being not so forthright."

The subcommittee said that it would focus its investigation on (a) the relation of price to content among products of substantially equal quality, (b) inconspicuous placement of contents data on the label – including obscure labeling which is used to conceal a rise in real price accomplished by reducing package content and

Photo entered in record *was part of testimony by Package Consultant Thomas Wharton. The witness made the point that in the case of these seven brands of instant mashed potatoes, the larger the package, the smaller the contents.*

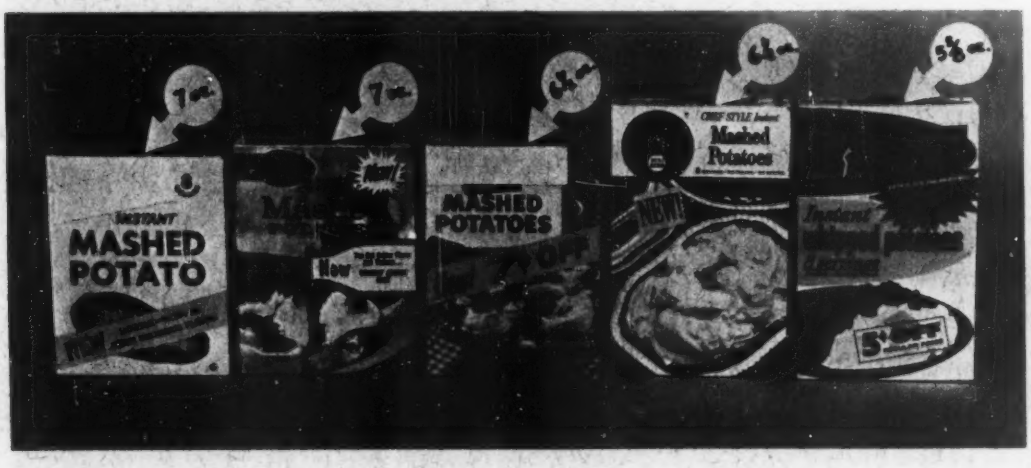


Chart exhibited *at the hearings shows "mental gymnastics" required to compare prices of seven detergent brands in six package sizes. Chart is explained at hearing by committee economist, Dr. E. Wayes Browne.*

NEWS PHOTOS

(c) the practice of "odd-weights" labeling, which makes it difficult to evaluate comparative costs.

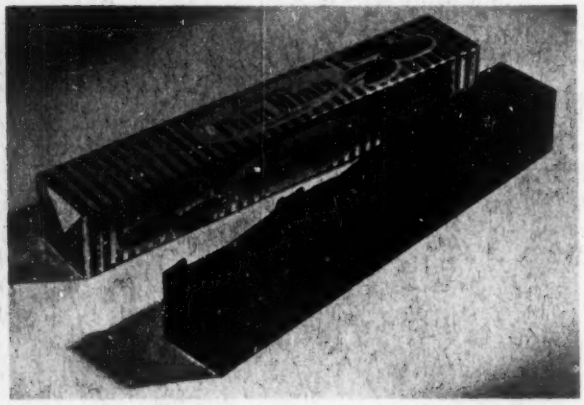
At the June hearings, specific examples illustrating such practices (consisting of packages taken from store shelves, but with brand names masked) were exhibited by the subcommittee. Among them were:

- Two well-known brands of instant coffee in glass jars of exactly the same size and fill level. However, one contained 6 oz. of product, with the net-weight statement appearing prominently on the front of the jar. The other – a thicker-walled jar – contained only 5 oz., with content data in small type on the back of the label. In price per ounce, the 5-oz. jar of instant coffee was more costly than was the 6-oz. package.

- Three successively introduced boxes of a name-brand paper napkin, each the same size and price. The earliest box carried a prominent facing-panel announcement of its net content: 80 napkins. In the next stage, content information (still 80 napkins) appeared in small type on the back of the box. The third and current package holds only 70 napkins and so states – but in the same small type size and appearing in the same location as on the intermediate container.

- Five leading brands of dry detergent powder, all in the same-sized carton, but each containing a different weight of product – varying, from the smallest quantity to the largest amount, by as much as 6¾ oz.

Celebrated case *is that of Delson Thin Mints package. After many months, F&DA is still trying to get conclusive court ruling that hollow ends and spacers in container constitute deceptive packaging. If Government wins, this will give necessary legal precedent for all-out campaign against "deceptive space." The District Court twice ruled against the Government; the Appeals Court holds opposite view, and case probably will end in Supreme Court. Small Delson Candy Co. stands by its guns despite heavy legal expense.*



The witnesses

Opening testimony was restricted almost exclusively to representatives of consumer groups pressing home their attack on "deceptive packaging" in headline-making phrases. These included a number of women: Sen. Maurine Neuberger (D., Ore.); Marya Mannes, staff writer for *The Reporter* magazine; Dr. Persia Campbell, head of the economics department of Queens College; Mrs. A. I. Malstrom, executive vice president, Federation of Homemakers, and Sarah H. Newman, board member, National Consumers League.

Testimony in a similar vein also was heard from Dr. Ernest Dichter, president, Institute for Motivational Research; J. H. Littlefield, Michigan Agriculture Dept., and Dr. Colston E. Warne, president of Consumers Union, publisher of *Consumer Reports*, a service magazine that has been waging an editorial campaign against deceptive packaging practices.

A few pertinent excerpts and summaries from the testimony of some of these witnesses illustrate the gen-

eral tenor of the hearing and give an indication of the largely misinformed pressures that are building up against consumer-goods packagers:

Marya Mannes (billed by an influential Eastern newspaper as "the St. Joan of the housewives"): Blasting modern supermarkets as "the greatest exercise in planned confusion since the bazaars of Samarkand," Mrs. Mannes said that "the word consumer is sometimes spelled s-u-c-k-e-r." Leveling criticism at what she described as increased emphasis on bigger packages without comparable saving to the consumer, Mrs. Mannes said: "In supermarkets, the package is the salesman. The more space he takes up on the shelf (that's the reason for 'giant' and 'jumbo,' not economy), the louder his letters scream at you and the sooner you'll buy him." In the matter of varying package sizes, she asked: "What's the matter with simple sizes like a pint or two pints or a quart or two quarts? I'll tell you what's the matter; they're too easy for the consumer to figure. You might know exactly what you are getting."

Sen. Neuberger, testifying that she has received numerous complaints from consumers regarding slack-filled packages, elusive statements of content and weight data, oversized packaging and misleading label terminology: "It shouldn't be necessary to provide every shopper with a slide rule so that price comparisons can be readily made. I am looking towards the day when the 'jumbo half quart' is bigger than the 'full half quart'."

Dr. Campbell said that the practice of reducing the contents of a package, rather than increasing its price is "concealed inflation." She recommended stronger enforcement of existing legislation together with a comprehensive program of consumer education.

Sarah Newman recommended legislation to help "the packaging industry emerge from the darkness of the new Middle Ages into the light of the modern world." She suggested standardization of package sizes and weights, and urged consideration of a law that would require packagers to print content weight or quantity on the facing panel in "good-size type."

Dr. Dichter: "Packaging and labeling practices that silently presume that the consumer is a gullible moron can end up to prove the advertiser to be the moron."

Dr. Warne suggested legislation that would, among other things, prohibit slack filling and require standardization of container sizes, for the purpose of eliminating fractional-ounce designations.

Only two statements reflecting packagers' viewpoints got into the record – one by Thomas Wharton, president of Packaging Consultants, Inc., and one by Lloyd Stouffer, editor of MODERN PACKAGING (see text on p. 110D). Taking issue with much of the previous inflammatory testimony, Mr. Wharton warned that "we must differentiate between the legitimate efforts of marketing people to motivate the shopper to pick up their products rather than their competitor's product and the sinister, obviously calculated misrepresentation which is intended to cheat and defraud."

During the hearing, Paul S. Willis, president of Grocery Mfrs. of America, issued a statement to newspapers in which he defended packagers' rights to adjust prices and package sizes as normal developments rising out of shifting competitive and marketing situations, "so long as the information on the label and other conditions are in compliance with existing laws."

Sen. Hart reports that the Antitrust and Monopoly Subcommittee hearings into "deception" in packaging and labeling will reconvene sometime this fall. At the forthcoming session, he has stated, testimony will be heard from packaging-field representatives.

NEWS PHOTOS

Partial line-up *of packages exhibited at the Hart hearing almost obscures Vera Mayer (foreground), general secretary of National Consumers League. Testifying in background is Sarah H. Newman, board member of consumer group.*

The F&DA viewpoint

Action against misbranded foods, drugs and cosmetics – which include deception in the packaging or its label – ranks third on the priority list of F&DA's enforcement program. So, says Commissioner Harvey, F&DA's apparently accelerated interest in the area of deception is not the result of any sudden flowering of the practice, but is simply a matter of basic economics. More operating funds have been allocated to the agency; therefore, it can intensify its activities in this area.

In answer to the question of how packagers, concerned with the new stirrings in Washington, can avoid being faced with charges of deception, Mr. Harvey had this to say to the editors of MODERN PACKAGING:

"F&DA has no czaristic power to interpret the Food, Drug & Cosmetic Act as it applies to the individual case. Nor do we have the authority to say that a package cannot be used because it is deceptive in one way or another. It is, however, incumbent upon the packager to try to insure guarantees against deception before he places his product on the market and expose it to examination by our investigators.

"Regarding slack fill, for example, if the container is not filled in such a way that looking at the package gives the consumer a reasonable judgment of its contents, it is liable to F&DA action. In labeling, it is not enough merely to avoid untruths; the label must tell about the packaged product in clear and unmistakable terms that will not mislead the purchaser."

Mr. Harvey also indicates that F&DA is not, as has

been feared in some quarters, planning to give special investigative attention to such container forms as aerosols, squeeze bottles, cartons whose content settles during shipment and shelf life, or to self-selection packages which have been designed to minimize pilferage.

"F&DA has no disposition," he states, "to bear down on what constitutes improvements in packaging. However, and this applies in every case, space inside the container which is not filled with product must not be more than is absolutely necessary to make the package effective for retail merchandising.

"If you can fill a package more completely by one method than another without diminishing its efficiency or increasing costs unreasonably, then do it. The law does not contemplate that packages can only be partially filled. If F&DA gathers sufficient evidence to bring a charge of deception," Mr. Harvey maintains, "the ruling will at that point be in the hands of the courts."

The legal aspects

And it is in the courts that F&DA hopes to obtain constructive guidelines of interpretation of the Food, Drug & Cosmetic Act. Mr. Harvey says that the U. S. Appeals Court's opinion in remanding the Delson Thin Mints case for review represents "the most precise judicial utterance yet on the application of the law."

In its decision, the Appeals Court rejected Delson's defense that a clear and correct statement of the net weight of the contents on the exterior of the package was sufficient. The point at issue, according to the court, was not that the purchaser expected to find a certain number of mints in the package, but did expect it to be reasonably full of mints. The court also ruled that the "25% of interior carton space" taken up by hollow ends and spacers tended to deceive the shopper, holding that "safety considerations, before they can be held to justify a slack package, must be shown to be reasonably necessary in light of alternative methods of safeguarding the contents of the package."

The Appeals Court's ruling, however, is completely at odds with the Newark District Court's original decision of Feb. 10, 1960, in favor of Delson, which was re-affirmed in its June 26 review of the case.

In its latest published opinion, the District Court noted that the Delson carton had an exterior volume of 39.2 cu. in. and that the aggregate volume of the interior partitions and hollow ends was only 5.4 cu. in., so that "83% of the practical volume of the package is filled with mints," not 75% as contended by F&DA.

The District Court also noted that the Delson mints are slightly dome shaped, which makes some of the "waste" space in the carton unavoidable.

The court held that "the slack in the accused packages would permit the addition of one more mint in each of the three compartments of the box, but this is a normal amount of slack."

Other key points cited by the court in making its new decision in favor of Delson:

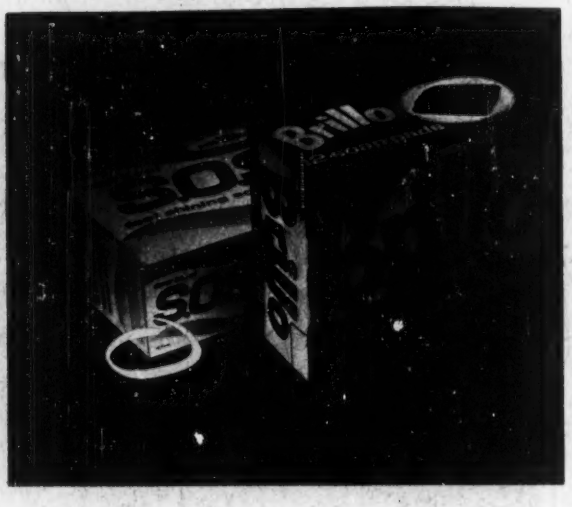
"Only about 25% of those interviewed by a market research concern used by the Government were motivated in their choice of packages by size rather than by price."

"Three out of four of the largest manufacturers of chocolate-covered thin mints in this country pack them in containers using hollow rather than single-thickness dividers. Hollow double-wall packaging is also widely used for other products."

"Packages using single-thickness dividers and ends cannot be manufactured with the speed and economy of the accused package, nor have they proven as satisfactory in use. The available alternative means of packaging claimant's chocolate-covered thin mints are not less deceptive than those actually employed in the accused package."

Despite these impressive legal broadsides, F&DA still feels it has a good chance of making its charges stick. Right now, the initiative is back in F&DA's hands and it is considered certain that the agency will file a new appeal with the Circuit Court of Appeals, which set aside the District Court's original judgment upholding Delson. If the Circuit Court once again upholds the Food & Drug Administration charges, the stage will then be set for a Supreme Court battle.

Competitors. *These two packages, identical in facing size, were purchased in a New York supermarket July 3 for the same price. Brillo package says "12 soap pads" in large type on five of its six side panels. S.O.S. package says "10 pads" in small type only on bottom of carton. Contents information on Brillo carton is reverse printed against a red background; it extends almost the full width of the facing panel.*



Where the FTC comes in

"We're going to serve injured business and consumers with a squad car instead of a hearse." The words are those of FTC Chairman Paul Rand Dixon and they signify the intent of a broad new attack on deceptive practices in the sale, advertising and shipment of products marketed in interstate commerce. The Federal Trade Commission's new "squad-car" approach to the deception problem is being implemented by:

- Re-organization of the agency's staff set-up to centralize responsibilities and thereby speed the prosecution of new cases while, at the same time, reducing an 18-month backlog of pending investigations.
- Increased use of the investigative powers provided under Section 6 of the Federal Trade Commission Act,

which gives FTC the authority to request corporations — via mailed questionnaire to a broad segment of any given industry — to provide information on their operations, with heavy penalties for failure to comply.

This "buckshot" operation, which has the effect of augmenting FTC's investigative manpower, is intended to eliminate deceptive practices before they have a chance to become deeply rooted. It differs significantly from FTC's traditional "whipping-boy" technique, in which one company is singled out for legal action, with the expectation that other similar violators will profit by the example of the one.

FTC will continue to use the whipping-boy control where it is indicated. But, says Mr. Dixon, the increased use of Section 6 (which eliminates the need for protracted personal, individual investigation) will make possible a broader attack on business evils and will enable FTC to catch all violators in a single net.

In FTC's new re-organization, the Bureaus of Investigation and Litigation have been replaced by the Bureau of Restraint of Trade and the Bureau of Deceptive Practices. A significant innovation under the re-organization is that attorneys assigned to each of the new bureaus will have full responsibility for an individual case from the time it is entered until the case is brought to a final completion.

In the former set-up, preliminary work on deception cases was done by the Bureau of Investigation, which turned its findings over to the Bureau of Litigation for legal action. It was, says Mr. Dixon, a system that only tended to invite delays in the progress of pending cases.

Action by F&DA *resulted in "14-oz. size" panel (in contrasting blue color) on front of Spry can. A new, fluffier product formula gave only 14 oz. in the same-sized can that previously had held 16 oz. F&DA objected when the 14-oz. statement appeared only in inconspicuous type on back panel. This design suggests one way of avoiding a charge of deceptive labeling.*

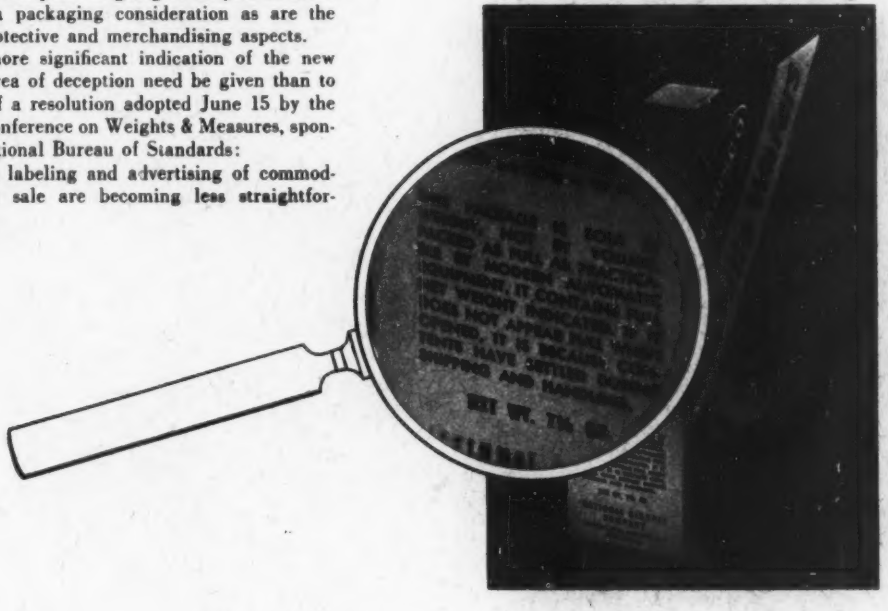
Summary

Like it or not, "deceptive packaging" has developed into a national issue whose ramifications must be considered with the utmost gravity by every packager of consumer goods. The clamor raised by consumers at the Senate hearings, as well as the redoubled activities of F&DA and FTC, make it clear that assurance against the suspicion of deception is going to be just as basic and important a packaging consideration as are the fundamental, protective and merchandising aspects.

Perhaps no more significant indication of the new climate in the area of deception need be given than to quote the text of a resolution adopted June 15 by the 46th National Conference on Weights & Measures, sponsored by the National Bureau of Standards:

"Whereas, the labeling and advertising of commodities offered for sale are becoming less straightfor-

Clear explanation *of technical reason for head space in carton should avoid any consumer or Government complaints. Several cracker, cookie and chip bakers now incorporate such statements in their labeling.*



ward, more confusing and increasingly deceptive; and

"Whereas, plain and honest representation of quantity, whether it be in advertising, labeling or other form of communication, is of vital concern to all consumers and to weights and measures officials throughout the nation: Therefore, be it

"Resolved, that the 46th National Conference on Weights & Measures hereby respectfully urge that all manufacturers, packers, advertising agencies and others with interest carefully survey and study this area of their own operations, with the aim of seeing that all laws, regulations and moral obligations are complied with."

STATEMENT BY LLOYD STOUFFER, EDITOR OF MODERN PACKAGING, TO THE SENATE COMMITTEE

Senator Hart and Committee Members:

MODERN PACKAGING Magazine was established in 1927 as the first medium for the exchange of information on packaging among all package-using industries. It is the oldest, the largest and still the only magazine embracing all types of packaging in all industries. It is an independent publication, with paid subscribers, whose only responsibility is to its 34,000 readers. I have been the editor of MODERN PACKAGING for 18 years. I believe, therefore, that I am qualified to speak for the packagers' viewpoint.

We as a magazine, and the packaging field generally, heartily welcome and commend this committee inquiry.

The phrase "deceptive packaging" can be interpreted in almost any way. Packaging and labeling have been operating for years in a legal vacuum, because of lack of definition of this and other terms. Lacking a clearly defined standard to which all could adhere, it is entirely possible that in the heat of competition some packagers have slipped into practices which in the most extreme interpretation of the word could be called "deceptive."

No packager, except a stupid one, would be intentionally dishonest. But like all business men in our competitive, free-enterprise system, a packager will go as far as the law allows in meeting competition. The trouble here is that there has been no law and no rule that will say: "This is deceptive; this is not."

The consumer complaints you are hearing are, I am sure, based not on dishonesty of the package, but on failure to understand certain technical limitations and requirements of packaging and merchandising and — in the final analysis — on failure to read the label. For every label must, by law effective in every state of this Union, honestly state the weight, volume or quantity of contents — or else the merchandise is subject to seizure and the packager to heavy penalties under existing law. This happens rarely and only then, you can be sure, because of some mechanical malfunction in weighing or filling.

My purpose here is to explain certain technical reasons why some packages appear to be incompletely filled; why packages must in some cases be made considerably larger than their contents, and why there is sometimes a seemingly confusing range of sizes and prices among competitive products. I would not defend any package which is deliberately misleading or deceitful.

Over many years we have found that the most frequent consumer complaint is over cartons of certain products, such as cereals, which upon opening reveal an inch or two of empty space at the top. The consumer erroneously believes either (a) that she is receiving short weight or (b) that the packager has deliberately made the carton overlarge to deceive her.

Neither assumption is correct. The fact is that certain products, such as corn flakes, will settle appreciably after the package is closed and shipped, despite the best efforts of the packager. Vibratory devices are employed in almost all such cases to settle the contents as far as possible before the package is closed. But they cannot duplicate shipping and handling, which settles the product further and accounts for the void seen by the consumer.

Theoretically, it would be possible to vibrate such packages on the filling line long enough to reach the ultimate settling point. But if this were done, the speed of packaging would be so reduced and the cost of the product so increased, few of us could afford to eat corn flakes.

Any suspicion that the corn-flakes manufacturer wants to use an oversized carton is simply not realistic. Profits on such a product are figured in a fraction of a cent per package and if the packager could eliminate one square inch of cartonboard, he certainly would do so.

A second technical reason for oversized packages in some cases is the need for cushioning to prevent breakage of frangible products. I need only cite the case of Delson's Thin Mints, packaged by the Delson Candy Co. of New York. It is true that a portion of the space of this package is taken up with cardboard dividers which the company says are necessary to separate the mints and prevent breakage. The Food & Drug Administration, quite understandably, has seized upon this as a test case. But the Federal District Court in Newark, just this week, has re-affirmed its judgment that the packager's position is sound and reasonable, notwithstanding an opinion to the contrary by the Circuit Court of Appeals.

Here, again the consumer must remember that without the cushioning devices he might receive a product that was broken and unacceptable, and he must bear in mind that the packager is not apt to spend money for cushioning beyond what he finds to be necessary.

A third factor affecting the size of packages is, ironically, the dishonesty of a certain number of consumers themselves. Pilferage in self-service stores is such a costly problem that most stores will simply refuse to handle any package small enough to be concealed in pocket or purse. I am told at least one large chain food has a flat rule than any store manager who experiences pilferage losses in excess of 3% of sales (a not unusual figure) will be summarily fired. Naturally, there is pressure on packagers to make packages big enough to discourage pilferage.

A very common complaint of consumers is that they have found a package slightly reduced in size and content without reduction in price. Before condemning the packager for deceptive practices, the consumer must consider that the packager, in these times of rising costs, probably faced a choice of reducing the package or increasing the price. Which should it be? If the net content of the package is stated on the label — as it must be — the packager is certainly not guilty of dishonesty. And the consumer is, of course, perfectly free to make comparisons of content and price with other competitive products.

If the average conscientious packager can be criticized on any point it is that the contents statement is often relegated to small type on the back side of the package. Here, the packager is following a design trend and following the practice of his competitors. If a standard were fixed by law, requiring that the contents statement appear in type of a specified size at a specified position on the label, giving all packagers an equal standard, I'm sure all would cooperate. Such a law is effective in Canada.

As a spokesman for the packaging industry, I shall be glad to cooperate with your committee in your hearings and to answer any questions to the best of my ability.

Versatile sell in corrugated

Caster manufacturer's sleeved tray for retailers who want cartoned merchandise converts to hang card or bin package for handling in self-service outlets

In the face of the strong swing to plastics for packaging hardware and housewares items, the Faultless Caster Corp.'s versatile use of corrugated to contain and display two different products shows how an old material can be taught new tricks.

The problem for this 70-year-old Evansville, Ind., company (700 employees, $10 million sales) was to create for its principal product—casters—a single, dual-purpose package that would do the merchandising job then being done by separate cartons and hang cards. The company believes that, while more and more hardware outlets are turning to self service, there are still some clerk-service stores whose managers prefer boxed items.

To satisfy both types of retailers, a paperboard tray with removable sleeve was considered. With the sleeve on, the package would appeal to clerk-staffed stores. Without, the tray could be displayed for self service as a hang card or in a bin.

The idea seemed to combine versatility with relative economy, but package tests showed that such trays would not stand or stack successfully and became "dog eared" during shipment or on the shelf. Attention was then drawn to corrugated.

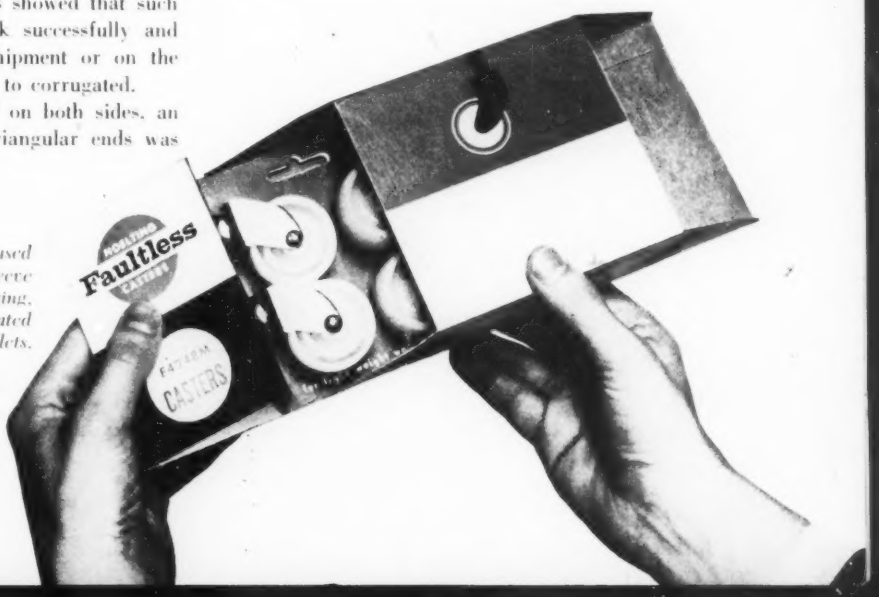
Using B-flute board bleached on both sides, an open-sided tray with formed triangular ends was developed which leaves an open area in the middle for the caster wheels. Caster stems fit into die-cut holes in the triangular ends with only the wheels showing. A chipboard sleeve completes the package.

Received at the plant flat, the tray is manually loaded, formed and glued in a jig. The jig and, finally, the sleeve hold the tray in shape while the glue sets. Cost of the new package is reported to be slightly higher than that of former packages.

For a companion product—furniture glides—Faultless uses a hang card of the same B-flute corrugated, die cut to accommodate the glides.

SUPPLIES AND SERVICES: Corrugated caster tray and glide card by Inland Container Corp., 700 W. Morris St., Indianapolis 6. Chipboard sleeve by Crown Zellerbach's Western-Waxide Div., 2101 Williams St., San Leandro, Calif. Package design by Peter Schladermundt Associates, 205 E. 42 St., New York 17.

Hang cards *of die-cut corrugated for pegboard display of furniture casters and glides.*



Convertible package *can be used intact as a carton, or the sleeve can be removed for hanging, stacking or binning of the corrugated tray in self-service outlets.*

QUICK-CHANGE LABELING

How do you label a thousand varieties of a product? In the hosiery industry—where the bigger companies package an almost inexhaustible variety of nylons to satisfy feminine preference—the answer to this question until recently was a slow and expensive hand-fed operation.

Now, mechanization is providing speed and economy with the adoption by Acme-McCrary Corp., Asheboro, N. C., of a new combination feeder, printer and pressure-sensitive labeler that can handle cellophane envelopes for hosiery at more than 15,000 per day, an increase of 233%.

Pre-printed in a multitude of brand names favored by this firm's chain-store buyers, the film envelopes are whipped through the new automatic unit, prior to filling, and are accurately affixed with small pressure-sensitive stickers bearing the style number, color, size, length, denier and retail price appropriate to each item and trade name.

So new is this machine that Acme-McCrary (1,700 employees, $12,000,000 gross) has not yet been able to calculate the cost savings it achieves in increased production and reduced manhours.

But it has been estimated that in a hand operation, one worker could reach a maximum of only 20 labels per minute (4,500 average per day), while the new unit is being run in at 65. Another plus in the mechanical operation is the high quality of printing and accurate alignment of the labels, two points on which chain stores reportedly have criticized hand-imprinted and hand-applied labels.

The secret of this intermittent-motion machine is in the perfect synchronization of the three mechani-

Label is spotted *accurately in any desired location on the film bag, though the upper right-hand corner is the preferred spot. Acme-McCrary now labels about 1,000 different combinations of brand, size and style of nylon hosiery on the new machine.*

Roll-fed printer *on new automatic bag-labeling machine can be changed in seconds from one hosiery designation to another by use of economical, compact, rubber printing plates. Pressure-sensitive labels, mounted on release-coated paper, are positively positioned in imprinter by feed fingers (not shown).*

OF FILM BAGS

With versatile new equipment for pressure-sensitive stickers, Acme-McCrary boosts output and cuts the cost of identifying and pricing vast numbers of envelopes for hosiery

cal components and in the flexibility of the miniature letterpress, which can be switched from one set of data to another in about 10 seconds.

A horizontal-feed magazine at one end of the machine is equipped with a vacuum arm that lifts a bag from the stack and feeds it through nip rolls to the main, four-belt package conveyor. With this machine, Acme-McCrary is presently using a single size of envelope ($7\frac{1}{4}$ by $9\frac{1}{2}$ in.) made from No. 450 MS cellophane. But the feeder is said to be capable of handling a range of sizes from 3 by 4 in. to 10 by 12 in. in almost any commercial film.

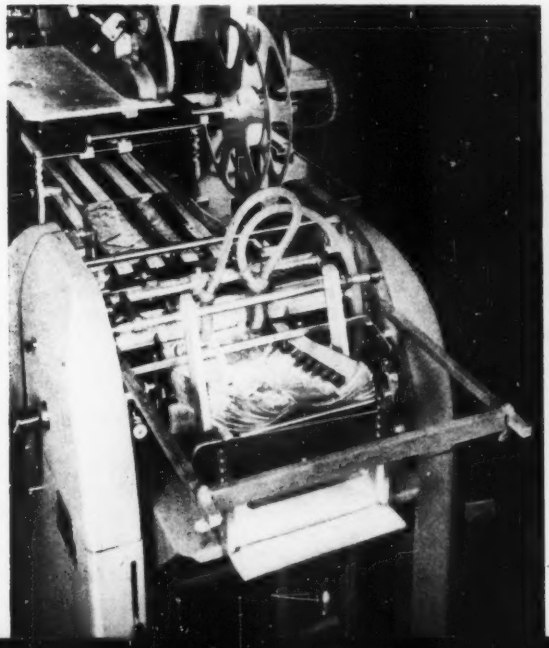
While the bags travel down the belt to the labeling station, the labels are printed on the overhead press. As the 1-by-$1\frac{1}{4}$-in. stickers—mounted on release-coated paper and wound in reels of 6,000 units—feed into the printer, they are accurately registered by sensitive fingers that index on the trailing edge of the labels and push them positively into printing position. Five distribution rolls that spread the ink uniformly over the type face assure even printing. While the machine will utilize either metal or rubber plates, this company uses rubber printing plates, because they are easily stored.

Leaving the printer, the strip of labels loops around a control arm to provide an adequate reserve for the application station. The arm activates a mercury switch to start or stop the printer as the loop shortens or extends to pre-set lengths.

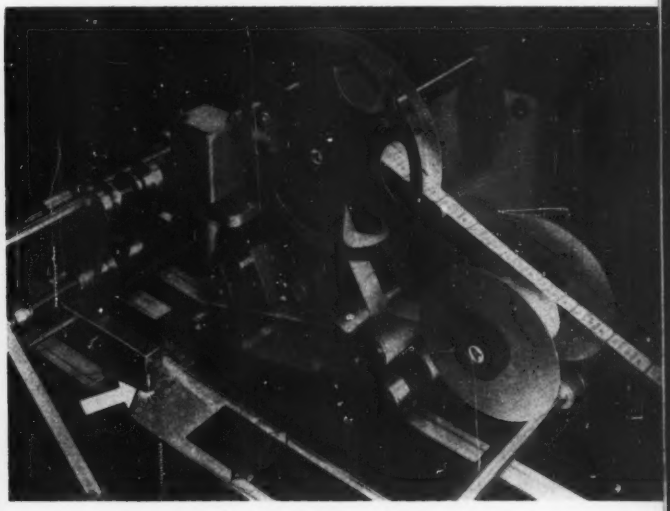
Registration for labeling is accomplished by taking advantage of a peculiarity in hosiery packages. By custom, these envelopes have a printed strip on the face running to the bag's edge. They can be spotted with a photo-eye positioned to pick up the leading edge at this point. [*Continued on page 202*]

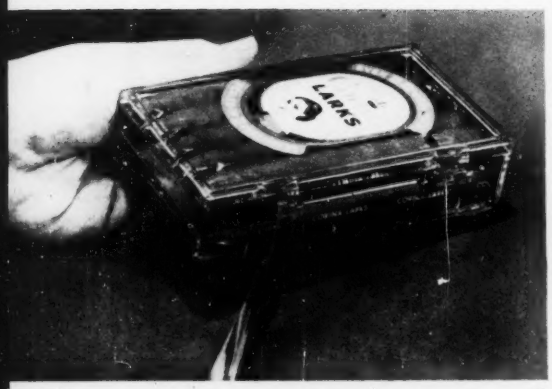
SUPPLIES AND SERVICES: Model 275E automatic labeler-imprinter, "Kum-Kleen" and "Perma-Grip" labels by Avery Label Co., Monrovia, Calif.

Automatic bag feed *is an innovation that replaces one operator. Vacuum-arm device and nip rollers deposit the bags on the main feed belts for conveying to the labeling station.*



Labeler *utilizes photo-eye (arrow) to spot bag and trigger labeling action. Labels are peeled from paper backing by an abrupt bending of the web as it reverses under knife-edged pre-heating plate (center). At same point, an impressor arm pushes label down onto bag.*





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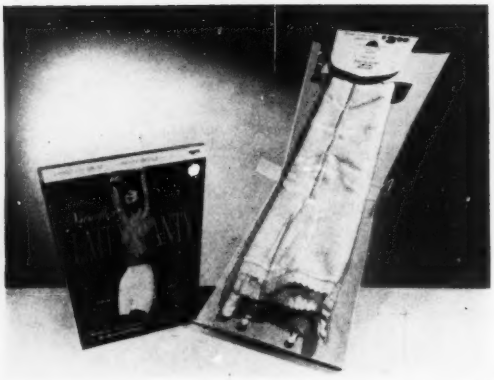

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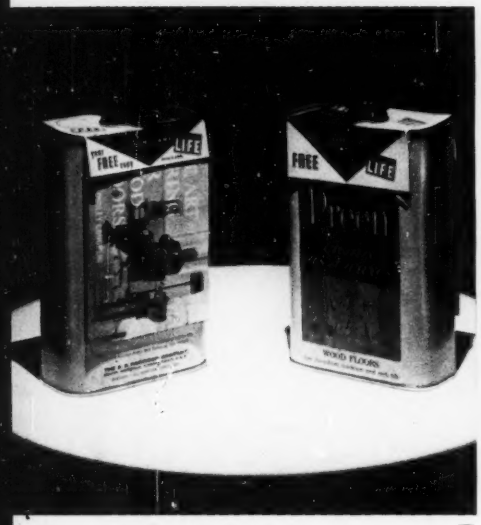

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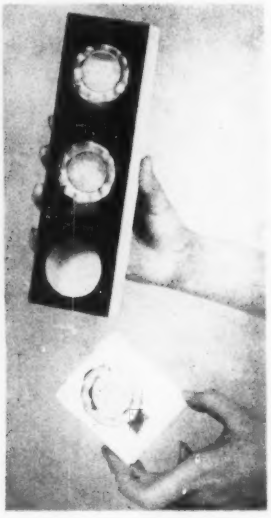

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1 A metalized polyester pressure-sensitive tape is credited by General Cigar Co.'s Jose Escalante Div. for maintaining factory freshness of Corina Larks cigars six times longer than cigars packed conventionally. The flexible tape is applied around the entire closure of the container, including hinges. To break the seal, a small tab at one end is lifted and the 18-in. tape pulled. The special high-tack-adhesive tape is applied automatically. "Scotch" brand polyester tape No. 850 and tape-applying machine, Minnesota Mining & Mfg., St. Paul, Minn.

2 Naturflex girdles are packaged in a two-piece, trapezoid-shaped container aimed at overcoming some of the problems encountered in chain-store retailing of these products. Outer shell, full-color printed in a dramatic design, gives complete product information—to aid "on-sight" selling where there are no fitting-room facilities. Fold-over interior "nest," die cut and scored to hold the garment flat to its full length for customer examination, may be pulled out of the shell and replaced without damage to product or package. Package size and shape are designed for maximum utilization of display and stockroom space. Package, Blum Folding Paper Box Co., Valley Stream, N. Y.

3 An attention-getting paperboard collar has effectively solved the problem of how the A. S. Harrison Co. could obtain free distribution of a booklet on floor care along with its metal containers of Preen floor wax. The 20-page booklet is simply stapled to the collar along its back score line. The collar has a circular die-cut opening in the center that fits over the can's screw cap. Scores on either side fold down over the can, the booklet fitting neatly against the can's back panel. It can be easily detached, freeing it completely from the collar. A paper sticker seals the booklet, to avoid any problem in packing. Collar, Brooks & Porter, New York.

4 Around the world, Coty's famous Muguet des Bois fragrance line is appearing in a family of new packages of unified design, selected as being more appropriate to the name of the fragrance. With green and white predominating, the new lilies-of-

PACKAGING PAGEANT

the-valley motif, accented with gold lettering, is the result of agreement between representatives of all Coty operations meeting recently in Paris. An outstanding characteristic of the new packaging is the quality printing and embossing that gives a realistic third-dimensional effect to the floral decor. Design, Eric de Kolb, New York. Cartons and wraps, The House of Harley, New York.

5 Avon Products' "First Prize" men's toiletries set, distinguished by a Mylar embossed gold-leaf medallion decorated with twin tips of ribbon, is packaged on modified automatic cartoners at speeds of 120 per minute. Lower edge of the seal is in register with a 240-deg. die-cut slit, with the ribbon glued to the carton's inside surface. In the forming operation, ribbon ends fall free to the front panel through the die-cut opening. The sleeve holds three packages, framing the seal and ribbon of the cartons. "Ribpac" container, Container Corp. of America, Chicago, using Du Pont Mylar. Modified CMV cartoners, R. A. Jones & Co., Cincinnati.

6 What many very old companies can still do to bring surface design of their packaging up to date is illustrated by this example of old and new G & O Weed & Ivy Killer cans from Goulard & Olena's chemical-product line. On one product in the revamped packages, the company reports a threefold sales increase in a three-month period this year compared with the same period of 1960. Design, Charles M. Huck, New Brunswick, N.J.

7 The John J. Nissen Baking Co. deposits angel-cake batter and bakes it right in this new foil-laminated tray which goes to market as a "sell-in" package. The tray is fully printed on the outside in a two-color design of gold and brown to complement the golden brown of the cake it holds. After bake-off, the cooked cake moves directly to the cellophane-overwrapping machine. Aside from the obvious production advantages of the bake-in tray, this new container adds a merchandising extra to the product when displayed in retail outlets or is stored on home shelf. "Pak-A-Pan" container, American Can's Marathon Div., Menasha, Wis.

8 DCA Food Industries, Inc., recognizing the need for upgrading its institutional-food containers, has redesigned the packaging for Downyflake pancake syrup and has added an extra fillip—a polyethylene lid with pouring spout to aid kitchen personnel in dispensing the syrup into cruets. Six #10 cans are packed to the case, along with one dispenser lid. The lid fits on the can top after the metal lid has been removed by a can opener. The five-color wrap-around paper label features the new Downyflake logo on top of a light blue snowflake design and a contemporary outline drawing. Polyethylene pour-spout lid, Keolyn Plastics, Inc., Chicago.

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NEW OLD

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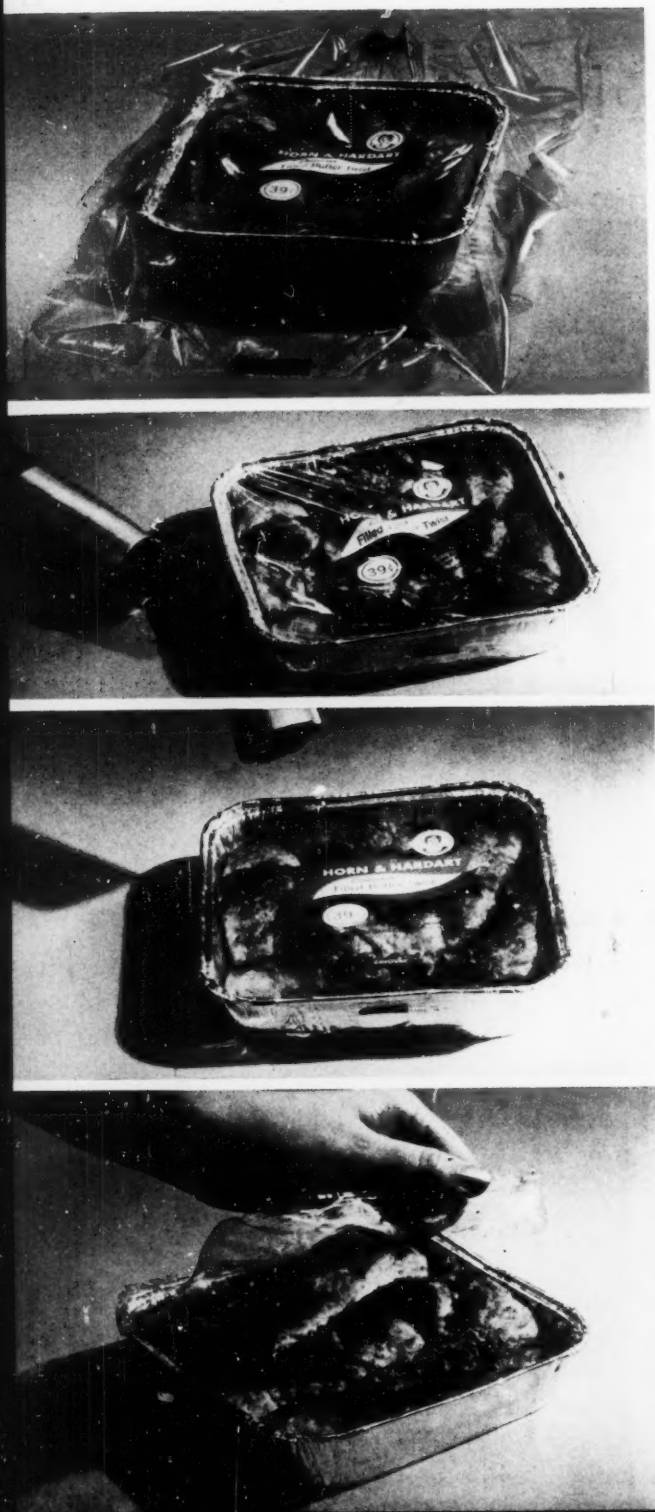
SHRINK: A NEW



PHOTOS COURTESY CRYOVAC

Simple steps *in applying shrink films under heat are shown in this simulation of an actual "lidding" operation at Horn & Hardart, New York. To create a shrink cover that can be removed and replaced several times by the consumer, a new irradiated and bioriented polyethlyene film is (1) draped over foil pan, (2) shrunk under the lip by hot air and (3) "ironed" smooth with final jet of heat. Film holds contoured shape during use.*

Stretch a handful of rubber bands in two directions and then freeze them and you have a good idea of how shrinkable films are made. Thaw the bands until they snap back together and you have a hint as to why these relatively new materials are becoming so important to the packaging field that, in numbers alone, they formed one of the most striking impressions at the recent AMA Packaging Show in Chicago.

Like the rubber bands, most thermoplastic films when in a semi-plastic state can be stretched in two directions to orient or align the molecules, which "freeze" in this position on cooling to form films with entirely new properties. When reheated, the films try to regain their original size by shrinking. This "memory," or shrink energy, and important increases in strength and barrier properties that are usually added by orientation are of such value that use of shrinkable films, according to one supplier, will jump to 25,000,000 lbs. in 1961—a fourfold increase in just a single year!

Despite this new-found boom, the idea of a shrink film is not new. A pioneering film (Cryovac) made from saran, introduced in 1948, quickly came to dominate the field of frozen poultry and meats, where it is employed for skintight bags and wraps that have high barrier properties. Because of its toughness and stability, plasticized vinyl film with a small amount of shrink has been an important wrap for textiles and paper products for some time and is lately broadening out into other uses in packaging where these properties are important.

But these older films have recently been joined by new shrinkable films made from irradiated and blown polyethylenes, polyvinyl chloride (PVC), vinyl chloride-vinylidene chloride copolymer, polyester, polystyrene and polypropylene. Created recently from both new and old films are such unique packaging forms as shrinkable "bands," film "lids"

DIMENSION IN FILMS

In one of the fastest developing trends in packaging, many products are turning to oriented films which shrink to fit. Here's a rundown on the eight materials and various methods now in use

and special floating "skin" packages that are already adding new dimensions to product appearance and protection. Even such standard packaging forms as full wraps, bags and laminations have benefited by using shrink films to achieve tighter packages with greater strength.

There is a wide range of equipment available to handle the new shrinkable films. Packagers can readily obtain machinery for wrapping, bagging, banding and covering products with shrink materials in hand and semi-automatic models. And fully automatic machines are now appearing as high-volume products switch to shrink packaging. Shrinking equipment that ranges from heat "guns" and blast tunnels to hot-water baths has been developed and is both low in cost and high in efficiency.

Just within the last year, the boom in shrink films has reached such proportions that it is advisable for every packager to stop and take stock.

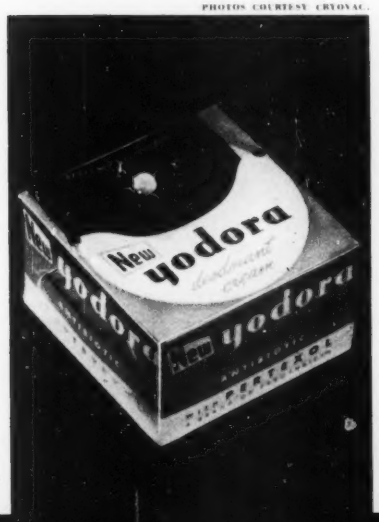
Basically, the orientation process produces or enhances three specific properties in films:

1. *Controlled shrink.* Films can be tailor made with shrink capabilities ranging from 15 to 70%. To tighten a wrap or bag for a product of simple shape, a low-cost film with minimum shrink properties is sufficient. Films with high shrink tension are utilized where great strength and the ability to conform to unusual contours is desired.

2. *Added strength.* Orientation produces tremendous gains in the tensile strength of most films—often five or six times that of the unoriented materials. Much of this extra strength is retained when the film is returned part way to its original size by

Band wrap *of tough irradiated polyethylene holds a premium pearl pendant in place on outside of a carton containing a jar of deodorant marketed by McKesson Laboratories, Bridgeport, Conn. Film is wrapped around package and bottom is sealed on hotplate (photo at right), then shrunk to a tight fit by two heat guns.*

PHOTOS COURTESY CRYOVAC.



Skin-type package *that combines shrinkable plasticized vinyl film with paperboard is used for a line of toys by Hubley Mfg. Co., Lancaster, Pa., because the film is almost invisible when shrunk in place and resists puncturing and rough handling.*

PHOTOS COURTESY IRON MOUNTAIN PAPER BOX.

Suspension package, *also using plasticized vinyl, started in the pharmaceutical and toiletry field and is now being utilized for such heavy hardware items as this industrial stapling gun by Swingline, Inc., Long Island City, N. Y. Despite sharp angles, points and edges on the product, this strong film holds item firmly in place during long shelf life.*

heat shrinking and can be utilized in both new and old packaging forms to add protection.

3. *Extra barrier.* The transmission rate of a film can sometimes be lowered to one-fourth that of the untreated material, thereby achieving a better barrier to gas and water-vapor transmission with a relatively moderate increase in cost.

Because the technology of making shrinkable films is still relatively new, there are some plastics that cannot be successfully oriented. Accurate and balanced stretching in both directions—which is frequently essential for heat sealing—is still sometimes difficult to attain on some materials. Impulse heat-sealing methods are generally the best bet for handling shrinkable films and "heatless" ultrasonic sealing techniques[1] are being studied.

However, progress in shrinkable materials has come with startling speed. Following is a rundown on the latest films and their newer uses.

Polyethylenes

Among the most promising new members of the shrink-film family are oriented polyethylenes. Some of these films are simply oriented during the blowing process. One is unusual in that it is treated by irradiation to cross link the polymer molecules and strengthen the low-density film.[2] After orienting, the irradiated polyethylene film has a shrink rating in both directions of up to 70%.

First used as a wrap for fresh produce in trays[3] and for frankfurters and chicken because of its

[1] See "Ultrasonics: When?" MODERN PACKAGING, July, 1961, p. 100, and "Ultrasonic Sealing of Foil," MODERN PACKAGING, July, 1961, p. 129.
[2] See "Irradiated Polyethylene Film," MODERN PACKAGING, May 1960, p. 121.
[3] See "Shrink-Film Tray Pack," MODERN PACKAGING, July, 1960, p. 132.

Comparative properties of shrink films

Types	Available gauges (mils)	Price per 1,000 sq. in. of most commonly used gauge	Tensile strength (p.s.i.)	WVTR[1] (gm./mil)	Oxygen permeability[2] (cc./mil)	Maximum shrink (%)
Polyester	1/2	5.5¢ (1/2 mil)	18,500	2.7-3.4	20-40	25-30
Polyethylene, blown	1 1/4, 1 1/2, 2	1.97¢ (1 1/4 mil)	not available			15-20
Polyethylene, irradiated	1/2-1 1/2	3.0-3.5¢ (1 mil)	8,000-16,000	0.6-0.7	6,000-9,000	50+
Polypropylene[3]	1/2, 3/4, 1	3.0-3.3¢ (1/2 mil)	18,000-22,000 21,000-27,000	0.4-0.6 0.15-0.25	200-300 1,300-2,200	30-40 50-70
Polystyrene	3/4-3	2.24-2.28¢ (1 mil)	9,000-10,000	6.0	3,300	25-40
Polyvinyl chloride	1/2, 3/4	3.38¢ (1/2 mil)	7,000-17,000	1.65-7.0	70-91.5	50-60
Polyvinylidene chloride	1/2, 5/10, 75/100, 1	4.0¢ (5/10 mil)	6,000-12,000	1.0-1.4	50-100	70
Vinyl, plasticized	3/4-8	2.46¢ (3/4 mil)	4,900-4,970	7-18	35-145	7-8

[1] As gm./24 hrs./100 sq. in./mil at 100 deg. F., 90% R. H. using $CaCl_2$.
[2] As cc./square meter/mil.
[3] Two films listed because of different properties.

economy and high oxygen permeability, this irradiated shrinkable film has recently given rise to two unusual applications—a "lid" and a "band"—which also illustrate its great strength and ease of use.

First of these is a "lid" or cover for a foil pan of baked goods. Used by Horn & Hardart, Inc., New York, for five breakfast-type sweet cakes, the crystal-clear and re-usable cover is formed by draping a piece of printed, shrinkable 1-mil film over the filled pan and shrinking it to a tight fit with blasts of hot air in two heating tunnels. The first blast, directed under the rim of the pan, forces the film to curl under the rim and locks the cover in place. The second tunnel "irons out" any wrinkles that may exist in the top of the material.

The operation is semi-automatic at 40 containers per minute and has enabled Horn & Hardart to cut over-all production costs for baked goods because the cakes can now be baked right in the foil package, eliminating conventional bakery trays which must be washed and handled separately. The new container also costs 1 cent less than the previous carton plus overwrap and has scored a big merchandising success in the outlets because it gives customers a full view of the product and enables the baked goods to be frozen either at the retail outlet or in home freezer units.

The cover is applied to both round and square pans, measuring 7 in. across, starting with a 12-in. square of film. The reduction of 66 to 73% in film area produces a shrink tension of 250 to 450 p.s.i., which keeps the cover wrinkle free and enables it to be removed and replaced.

In the second new application, the irradiated shrinkable polyethylene film is used as a band to hold a premium (a cultured-pearl pendant) firmly in place on a carton of Yodora cream deodorant, packaged by McKesson Laboratories, Bridgeport, Conn. The band, which is actually a partial wrap, greatly enhances the appearance of the premium.

Assembled in a hand operation, the card-mounted pearl pendant is slipped into a die-cut slot in the top of the carton, which has been loaded previously with the jar of deodorant cream on an automatic packaging line. A length of 1-mil shrink film is then cut from a roll and wrapped around the carton, the bottom edges being sealed on a Teflon-covered hotplate. Placed on a conveyor, the loosely wrapped package passes between two heat guns that direct blasts of hot air at the film's loose end flaps, shrinking them over the corners of the carton and tightening the whole wrapper. Four operators achieve an output of 32 to 40 packages per minute at a total packaging cost of 6/10ths of a cent per wrap—far less than conventional premium packaging.

Not all products or packaging forms need high shrink tensions or strong barrier properties, however. And for simple tightening of a conventional wrap, another new low-density polyethylene, one which is oriented during the blowing process in which the film is formed, is said to give the 15 to 20% shrinkage necessary for the job at a price no greater than that of unoriented blown film (see chart). Only one such film is now available, but several more are expected before the year's end.

The orientation of the film—which is already used for a wide variety of paper products, household items, records and textile products—enables polyethylene to be more easily used as a wrapping material, because the film can be easily applied and

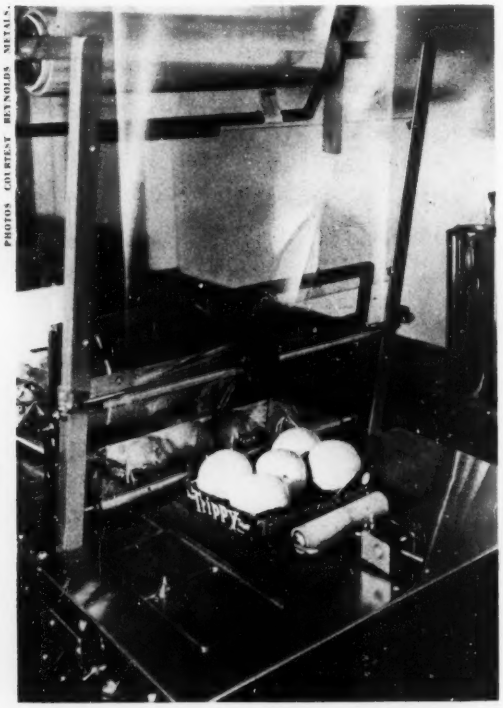
PHOTO COURTESY REYNOLDS METALS

Multipack *of six cans of refrigerated biscuits is created by Gladiola Biscuit Co., Dallas, with heat-shrink band of oriented polyvinyl chloride film applied by a new machine designed for heat-sealable overwraps. Machine by Packaging Machinery Co.*

Dispenser pack *is created with a shrinkable wrap of blown, oriented polyethylene that contains a ball of string and prevents tangling throughout the life of the product. In this package, a small gap is left at the top through which the string is pulled. Film by Mehl Mfg. Co.*

Shrink band *for many fresh-produce items and baked goods (upper photo) utilizes shrinkable PVC film with remarkable clarity and surface gloss that also withstands puncturing by sharp projections on products. A simple packaging unit (bottom photo) at Triple M Packaging Corp., Philadelphia, applies and heat seals the film as a band, which is then shrunk tightly around product in a hot-air tunnel.*

PHOTOS COURTESY REYNOLDS METALS.



heat sealed as a loose wrap, then tightened snugly with heat to give a glossy, clear package with high merchandising appeal, at a lower cost than is obtainable with any other shrinkable material.

Particularly interesting is the test use of such a wrap for balls of twine packaged by Shuford Mills, Inc., Hickory, N.C. By leaving a small opening in one end of this wrap with a length of string hanging out, a dispenser package is created that keeps the twine clean and prevents it from tangling or accidentally unwinding throughout the life of the ball. Pliofilm, a non-shrinkable wrap, has been used for making this package, too.

Because of its low cost, shrinkable polyethylene has also been used to package wallpaper—enabling this product to be handled and viewed, yet keeping it clean and bright. Paper cups and trays have also been wrapped in the material, where good clarity enhances printed designs and the film's great dimensional stability assures long shelf life.

PVC and plasticized vinyls

Even older members of the shrink-film family have gained new life from the boom in this packaging technique. Prime example is a plasticized vinyl that has been used for years for textiles and paper products. Through development of a new floating "skin" package on cards,[1] this medium-priced shrinkable film is beginning to sweep into the fields of pharmaceutical, cosmetic and toiletry

[1] See "High-Speed Stretch-Film Card Packs," MODERN PACKAGING, March, 1961, p. 110.

packaging, too. Now this unique "sandwich" of film and paperboard is moving into the toy field, where its great toughness and long life are prime assets. Used recently by Hubley Mfg. Co., Lancaster, Pa., for miniature metal cars, the tough film can be shrunk over sharp projections and admirably withstands handling by small fry in retail stores.

Unplasticized PVC film of the cast variety has also made its appearance as a shrinkable material. In addition to absolute clarity, this medium-priced material has a striking surface gloss that has led to its extensive use as a tight-fitting sealed envelope for phonograph records and albums. After shrinking, this film cover is virtually invisible, yet it adds a sales-stimulating gleam to the high-quality printing on the record jacket, gives complete protection from dust to the delicate product inside and also makes the package tamperproof.

The strength, good appearance and moderate permeability of this material is also leading to increased use of shrinkable PVC as a band wrap for tray-packed fresh produce, where it holds fruits and vegetables firmly in place, prevents handling damage in retail outlets and adds a look of quality.

At present, it appears that the field of phonograph records will be a major battleground among shrinkable PVC, polyethylene and polypropylene, all of which films are capable of doing the job.

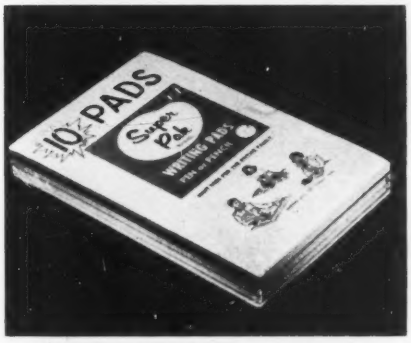
Polystyrene

In fresh produce, vinyls will have to fight it out with shrinkable polystyrene, a two-year veteran which, while it does not match the other films in tensile strength, does possess a sparkling appearance and offers the lowest cost of any high-shrink materials which are in use today.

This bioriented film, which allows almost free transmission of gasses and water vapor compared with many other films, is also the closest of any film to cellophane in appearance and texture. At present, it tends to be a little brittle, but development work is going forward to modify this characteristic and to improve the strength and fracture resistance of this low-cost material.

Such an improvement in properties could lead to further applications for paper products, soft goods and other non-food applications, where the material has already been tried with some success.

One of the toughest films in the packaging field—polyester—has been a [*Continued on page 195*]



Full wrap *of shrinkable polypropylene demonstrates good heat-sealing properties of this material and its ability to conform to such irregular surfaces as paper pads of different sizes, marketed by Barshep Mfg. Co., Chelsea, Mass. Film by Cryovac.*

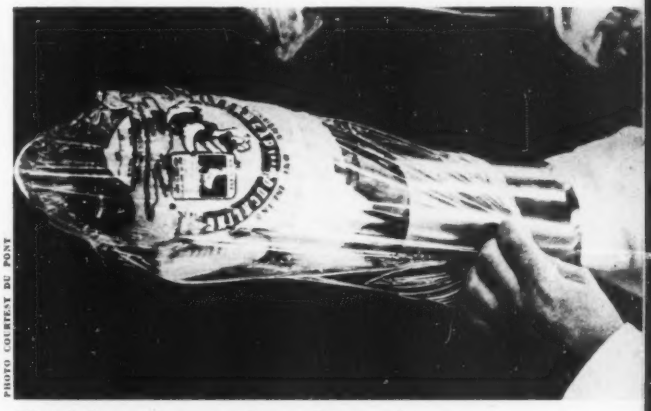
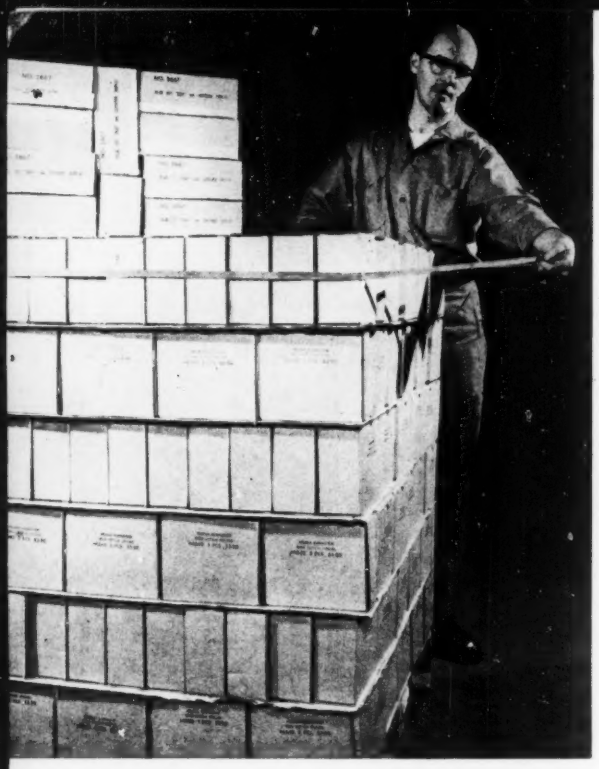


PHOTO COURTESY DU POST

Shrink bags *of strong polyester film provide a thin, transparent and flexible package for such frozen items as these ducks, packed by Riverhead (Long Island) Duck Processing Cooperative. The contour-bottomed bags are inverted before loading, to put the heat seal on the inside, and the product is loaded by means of a simple metal horn. Bags are fastened with metal clips and shrinking takes place in a hot-water bath.*

SOURCES: The following list is not necessarily complete, but includes those whose shrink films have been announced: Polyvinylidene chloride (Cryovac) and irradiated oriented polyethylene by W. R. Grace & Co.'s Cryovac Div., Cambridge, Mass. Blown oriented polyethylene by Mehl Mfg. Co., 2057 Reading Rd., Cincinnati 2, made from resin supplied by U. S. Industrial Chemicals Co., 99 Park Ave., New York 16. Shrinkable polyvinyl chloride by Reynolds Metals Co.'s Plastics Div., Richmond 18, Va. Plasticized shrinkable vinyl by Goodyear Tire & Rubber Co., Akron. Shrinkable polyester by E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del. Oriented polystyrene by Plax Corp., Box 1019, Hartford, Conn.; Dow Chemical Co., Midland, Mich., and Union Carbide Development Co., Chicago. Oriented polypropylene by Union Carbide Development and W. R. Grace. Vinyl chloride-vinylidene chloride copolymer by Dow Chemical's Dobeckmun Co. Div., Cleveland 13.



Palletizing dollar stretcher

A super-size version of the common rubber band is reported to be saving Helena Rubinstein, Inc., New York, some $1,200 annually in packaging labor, damage and replacement costs. Although the economies are not especially dramatic, the application indicates that cost-cutting opportunities exist in almost every area of the over-all packaging operation.

The company, a leading manufacturer of cosmetic products, is using the giant rubber band to steady the top layer of cartons stacked for warehouse storage on wooden pallets. The band (measuring up to 1½ in. wide by 6 ft. long and capable of being stretched to 18 ft.) simply is snapped around the top layer to keep cartons from sliding and toppling to the floor when the pallet is moved.

According to the packager, the rubber band can be used repeatedly, whereas the adhesive masking tape it replaces had to be discarded after a single application. The company also points out that the tape took excessive time to apply and often damaged carton surfaces when it was removed. Both problems reportedly have been eliminated since adoption of the king-size rubber band. *Rubber band by B. F. Goodrich Industrial Products Co., Akron 18, O.*

COST CUTTERS

New visual appeal achieved at lower material cost

A packaging-material cost reduction of 55 cents per thousand units is not a spectacular saving—unless the lower cost brings with it a decided upgrading of merchandising values.

Eldon Industries, Hawthorne, Calif., appears to have achieved just such a blend of economy and improved sales appeal in a completely overhauled self-selection package for two dozen toy polyethylene building bricks. The product formerly was marketed in a color-printed, square-shaped corrugated carton. Satisfactory though it was, Eldon felt that a package with stronger self-selection impact was needed.

The company's new and less costly container represents a radical departure from the old. It is a tall, rectangular chipboard carton—printed in two colors on a bright white background—with a broad polyester-film window extending the full width and half the depth of two adjacent side panels. The sparkling-clear window shows off the colorful plastic bricks inside which, in turn, help maintain necessary package rigidity. *Carton design by J. Chris Smith Associates, 1512 N. Las Palmas St., Hollywood 28, Calif. Container by Southern California Carton Co., South San Gabriel, Calif., using Du Pont's "Mylar" film for the window.*

Formed-plastic caps cushion Westinghouse instruments

Formed high-density-polyethylene end caps that cushion and suspend a delicate electronic instrument packed in a corrugated shipping carton are reported to be compiling an enviable record of performance and economy for Westinghouse Electric Corp.'s Meter Div., Newark, N.J. The rugged and flexible caps, which are slipped over each end of the instrument before it is cartoned, replace conventional bulky wadding materials. Among the packaging-cost savings credited to the plastic caps are: 50% lower material cost, 50% reduction in labor, 80% cut in package cube and 40% lighter shipping weight.

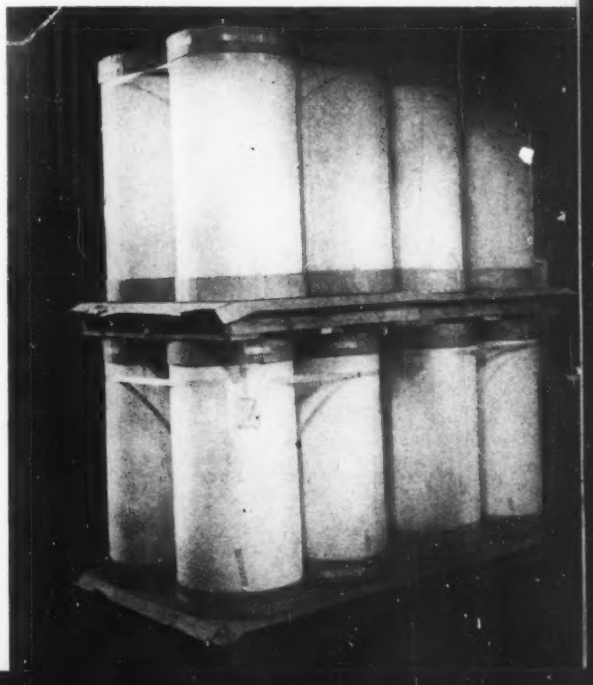
Westinghouse says that it chose high-density polyethylene as a package cushioning material because it is non-corrosive resistant to moisture and abrasion, and light in weight, in addition to possessing high tensile strength. Concentric sections, engineered into the plastic caps during the forming operation, supply good cushioning and shock absorption.

The company has extended its use of the plastic end cap to other instruments, with more applications to follow. *Formed caps by Eastern Vacuum Forming Co., Asbury Park, N.J., using W. R. Grace's high-density polyethylene resin.*

Industrial-packaging problem solved for 30% less

Cooperation between an industrial packager and its supplier has solved a packaging problem at a reported saving of 30% in material and labor costs. The packager is Minnesota Mining & Mfg. Co., St. Paul. Among its products is duplicating-machine paper, which is shipped in huge rolls. The paper's value requires that it be protected against dirt, damage and moisture during shipment. This protection formerly was provided by chipboard roll-end plates and a full overwrap. The paper's high cost and the labor needed to package each roll made this system too expensive, says 3M.

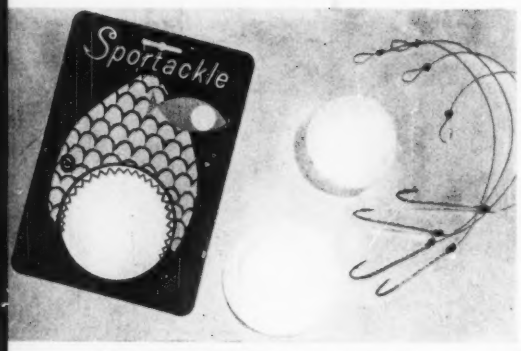
The cost-cutting package now in use, developed by the company and the packaging-engineer staff of its supplier firm, eliminates the overwrap. It consists simply of two sturdy corrugated-board caps adhered to each end of the paper roll by pressure-sensitive tape. Only one man is required for the packaging job. According to 3M, the heavy-walled end caps not only protect paper-roll edges from tearing, but also reduce soilage and scuff damage by preventing the roll from making contact with the floor when it is placed on its side. *End caps by Inland Container, 700 W. Morris St., Indianapolis 6.*



SUCCESS STORY NO. 7 OF A SERIES

SPORTACKLE

Setting a new and profitable pace in packaging and merchandising of fishing equipment and opening up important distribution outlets, 150-year-old Horrocks-Ibbotson Co.'s striking new blister packs incorporating plastic foam led the company to a 350% sales gain—in the face of an industry slump. Two hundred items on colorful hang cards now sell alongside drugs, foods, soft goods, gas and oil as this package invades five additional new markets.



Three-part package *that is used for 75% of the 200 items in the new Sportackle line by Horrocks-Ibbotson Co. consists of a colorfully printed hang card in one of three sizes, a blister in two sizes and a disk of expanded polystyrene foam also in two sizes. The foam provides sparkling display even for such commonplace gear as hooks and is re-used in the tackle box to hold the hooks.*

THIS MONTH'S COVER

MODERN PACKAGING

In the natural setting of a fisherman's paradise, these blister-packed Sportackle fishing flies were photographed especially for MODERN PACKAGING*'s cover by Rudy Muller.*

Once regarded mainly as the sport of grizzled outdoorsmen, fishing now counts millions of new and younger advocates as a result of innovations in spinning tackle that make a rod and reel nearly as simple to handle as a cane pole. Because of this broadened market, industry sales in the past decade alone have grown 30% to a total volume of $250 million per year.

But this expanded market also suggests the need for fresh packaging and merchandising techniques that better appeal to a youthful and increasingly urban generation—methods that present these sporting goods in more convenient locations and in more dramatic, convenient and informative ways than is possible in the typical helter-skelter displays of unpackaged merchandise at roadside bait stores.

In the forefront is the Horrocks-Ibbotson Co., Utica, N.Y.—a 150-year-old firm (300 employees, $4,000,000 gross) that by high quality and modern merchandising ideas has maintained its position as the second largest tackle manufacturer in the U.S.

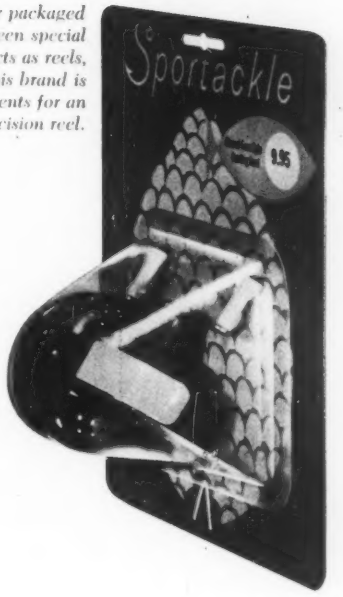
Taking a bold approach, this company launched in August, 1959, a broad line of 200 fishing items under a new "Sportackle" brand name, using a colorful blister package—the first to combine plastic foam with paperboard and plastic sheet in a hang-card fishing-tackle container. This package is the company's primary weapon (1) in an assault on four new markets never before successfully penetrated and (2) to recapture a fifth market all but lost 15 years ago.

Aimed at drug stores, supermarkets, discount outlets, variety stores and gas stations, the rack-displayed goods are marketed under the new brand name so they will not compete with H-I's conventional merchandise sold in department, sports, hardware and bait stores.

Indicative of its success, the Sportackle line has accounted this year for a 5% increase in over-all company sales—while the industry as a whole was suffering a major slump. In its second year on the market, the new brand has soared 350% in sales and the company has just opened a Canadian sales subsidiary, Sportackle of Canada.

While the company is making solid progress among rack jobbers (who are always looking for well-packaged goods with high turnover) and is expanding sales to retailers in all of the new fields, its success in the variety stores is perhaps the most significant. Big out-

Sizable items *such as this heavy spinning reel are blister packaged as effectively as the smallest dry fly or swivel. Sixteen special blister shapes are used for such unusually shaped products as reels, spools of line and lures. The retail price spread in this brand is unusually wide for a self-serve package, ranging from 29 cents for an assortment of hooks to $9.95 for this precision reel.*



lets for tackle before World War II, they slipped badly postwar. This year, sales of the Sportackle line to just one big variety chain are greater than H-I's total variety-store trade before the war.

The blister package that has stimulated these sales successes is a strikingly designed combination of hang cards in three sizes, expanded polystyrene foam inserts in two sizes and blisters in 18 sizes. Two blister sizes, however, accommodate 75% of the product line.

The cards, made from 24-point clay-coated newsback with an acetate heat-seal coating, are printed in a modern blue, green and orange design. At the time of packaging, they are imprinted by H-I with product designation, code and price. All 200 products are packaged on one of three cards measuring up to $6\frac{1}{2}$ by $8\frac{1}{2}$ inches.

The blisters are thermoformed from 0.0075-in. acetate sheeting for most items and from 0.015-in. sheet for the heavy reels. The packages are assembled on a standard semi-automatic packaging machine, which is now operated on two 8-hr. shifts to meet sales demand.

To permit the use of some blisters for more than one product, a form-fitting contour was ruled out. Searching for a way to support and position each item, regardless of shape, the package designer hit upon circular polystyrene foam disks, which display the small items effectively and lend sparkle and glamour even to such prosaic items as hooks and sinkers. Two disk sizes are employed, measuring up to $2\frac{5}{8}$ in. in diameter. Both are $\frac{3}{8}$ in. thick. The foam disks are used for about 75% of the items and are given extra promotion as "Saf-T-Hook Holders"—re-usable to keep flies, lures and hooks neatly in place in the tackle box. Only such bulky items as spools of line, big lures and reels are packaged without the foam.

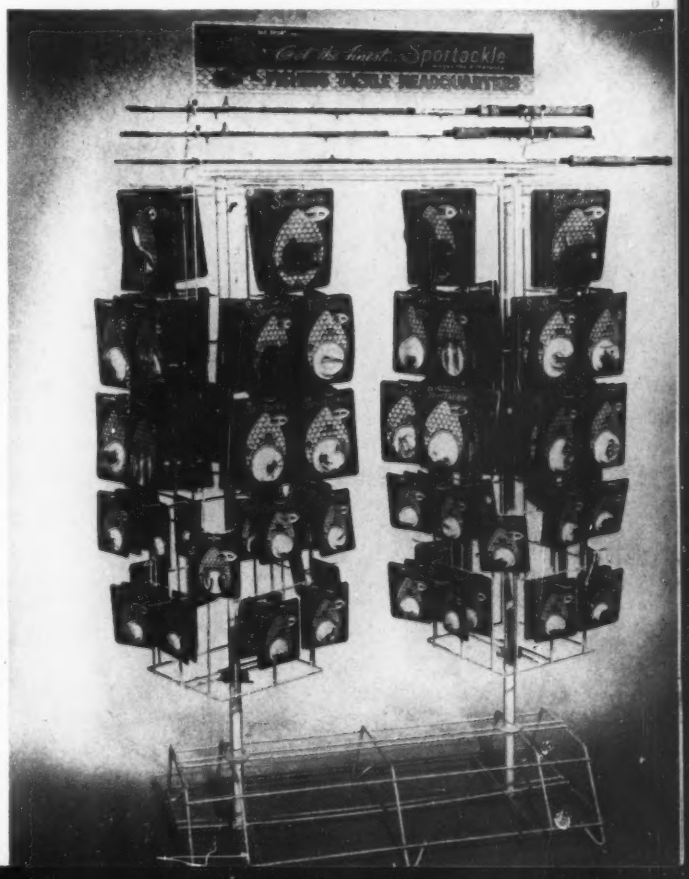
The packaging program has been backed this year by a $9,000 schedule of advertising in trade magazines aimed at the new outlets, a schedule that will be increased to $15,000 during the coming sales year.

Three different display units supplied by the company have been instrumental in the sales success: a small revolving wire stand for counter set-up in such small outlets as gas stations; a pegboard floor display for 30 different items for larger stores, and a wire rack with double revolving sections that hold 72 different packaged items and fishing rods—the de luxe sales tool.

These are the ingredients of a *Success Story* from which any packaged product can take notes.

SUPPLIES AND SERVICES: Hang cards and surface design by U. S. Printing & Lithograph Div., Diamond National Corp., 733 Third Ave., New York 17. Blisters by Plastic Enterprises, College Point, N. Y. "Styrofoam" disks by Tufflite, Inc., Ballston Springs, N. Y.

De luxe display *that holds 72 products on two revolving sections also has space for rods. One of three racks supplied by the company, this unit has played a major part in the success of Sportackle goods.*



Re-usable tray *stores O-cel-o sponge in use. Indentation in tray lip (right) facilitates grasping of tear-strip opening device.*

Moist sponge in a blister tray

Re-use package is a rigid, thermoformed polyethylene 'dish' with heat-sealed film cover to keep O-cel-o cellulose sponges soft

General Mills, Minneapolis, is test marketing a new idea in convenience packaging—three sizes of moistened O-cel-o* cellulose sponges in thermoformed, high-density-polyethylene trays which double as storage dishes for the sponges when the heat-sealed transparent-film covers are removed.

Opening of the package is facilitated by a transparent polyester tear strip, laminated to the under side of the notched cover, which rips a channel the length of the package, allowing the cover to be peeled off the container cleanly.

The new "Sani-Tray" package is being tested in Houston, Buffalo, Milwaukee and Cleveland. Analysis reveals that the tray is formed of high-density, colorless polyethylene sheet, approximately 12 mils thick. The cover is heat sealed to an integral overhanging lip about ¼ in. wide on all four sides. Molded-in vertical ridges on all side walls add strength and attractiveness. The translucent tray allows the color of the sponges (pink, blue, green or yellow) to be clearly seen.

The cover is reverse-printed cellophane, extrusion coated with polyethylene on the inside. Aside from its heat-sealing function, the polyethylene was undoubtedly specified for its moisture-protection properties, since the sponges are packed with a tiny amount of water to keep them soft, a selling lure used earlier by the manufacturer of O-Cedar mops for a moistened sponge mop head in a heat-sealed polyethylene bag.† This softness in the O-cel-o sponge is not apparent through the semi-rigid tray, but can be readily felt through the pliable cover. The transparent polyester tear tape is laminated to the under side of the polyethylene ply.

Small, medium and large sizes of O-cel-o sponges are packaged identically except for size of tray and cover. General Mills also is marketing a "bargain pack" consisting of four small sponges packaged with a thermoformed tray in a film pouch.

SUPPLIES AND SERVICES: Trays and covers by Formed Container Corp., Orangeburg, N.Y. Package design by Lippincott & Margulies, 430 Park Ave., New York 22.

*General Mills' trade name is "O*cel-o."

†See "Capturing the Qualities of Mops," MODERN PACKAGING, Nov., 1959, p. 139.

Three sizes *of moistened O-cel-o sponges in molded high-density-polyethylene trays with heat-sealed film cover and "bargain pack" (upper right) of four small sponges with similar storage tray in film pouch. Tear strip rips open tray packages along bottom of cover.*

Sales just seem to grow and grow for...

another prestige product packaged by BURT

SHULTON FRIENDSHIP GARDEN TOILETRIES
—folding cartons, set-up box made by F. N. Burt.
Designed by Adam J. Grodin,
Vice President — Art, Shulton, Inc.

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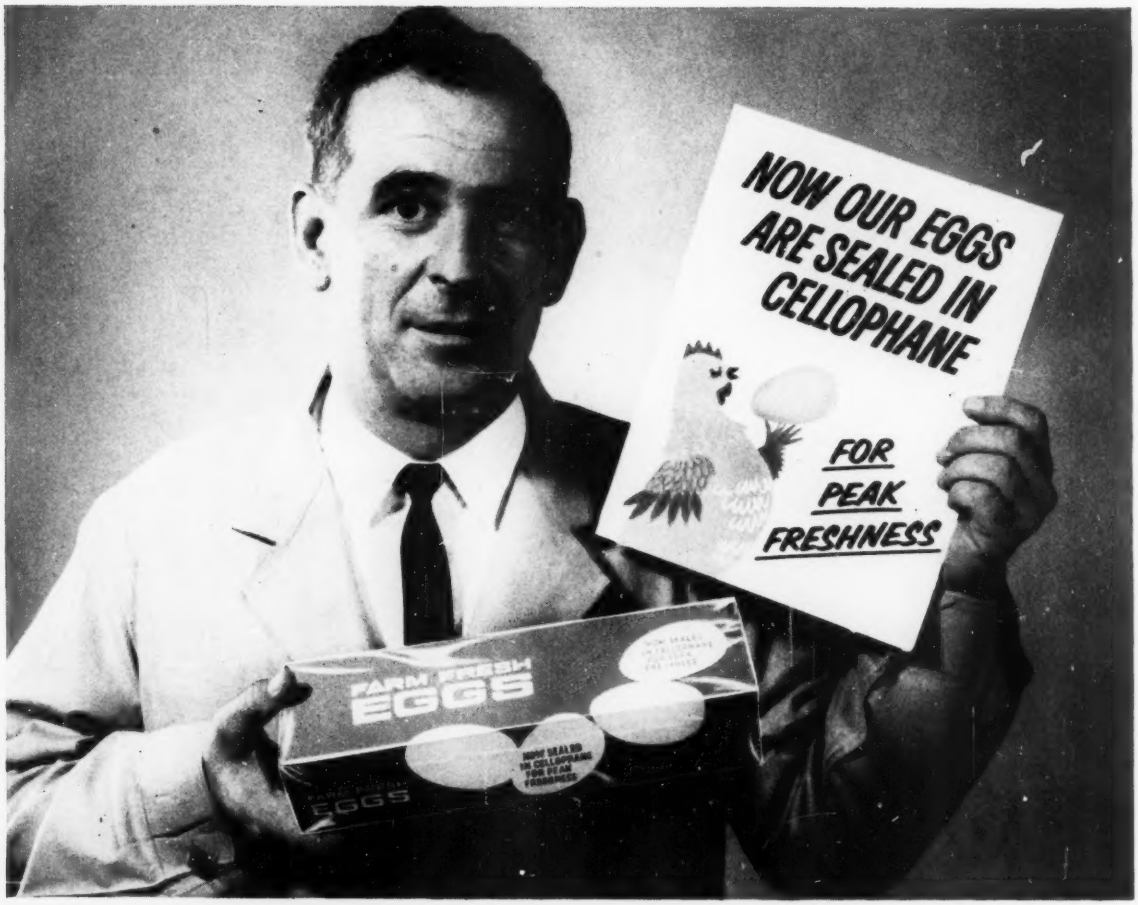
Offices in Principal Cities or Write Direct. Canadian Div.: Dominion Paper Box Co., Ltd., 250 Islington Ave. S., Toronto 18, Canada



How AVISCO® CELLOPHANE created a new marketing opportunity

There had been few changes in egg marketing, packaging and merchandising in 30 years. A new approach was needed to increase sales. Recently, Avisco cellophane answered this need. It gave egg cartons a new, sparkling look. It sealed in freshness and flavor longer. And it became the focal point of a new and aggressive egg merchandising program. Today, hundreds of supermarkets are promoting eggs in Avisco cellophane wrapped cartons, and a sales increase of 25% is a common occurrence. The new wrap also saves money for retailers. It eliminates egg swapping and reduces breakage. Even when an egg is broken, it won't leak through the film to damage other cartons or soil the display case. Avisco cellophane is also low in cost, trouble-free on packaging machines, and it prints beautifully. Perhaps it can create a new marketing opportunity for your product. Phone or write for an appointment with our representative or a selected Avisco cellophane converter specializing in your field.

AVISCO

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CHARLES A. SOUTHWICK, JR., Technical Editor ROBERT J. KELSEY, Engineering Editor

The free-piston aerosol

Principles and design considerations behind the development of this new form of pressurized container for viscous products. *By H. T. Hoffman, Jr.,* and Nicholas Marchak†*

The development of the first commercially practical pressure container for a wide variety of viscous products (1)[1] now makes it possible to exploit the convenience features of aerosol packaging for slow-flowing items. This container, which is called the MiraFlo[2] free-piston pressure container, has a loose-fitting "free piston" which keeps the propellant from mixing with the product. A complete spectrum of viscous materials can be dispensed from this container without adversely affecting either their appearance or physical characteristics.

The free-piston container will dispense in any position and will expel an exceptionally high percentage of the fill weight of product. It will be especially useful for the packaging of many products which are difficult to remove from ordinary containers. Pharmaceutical and cosmetic products that will benefit from the convenience of free-piston packaging include hair dressings, toothpastes, beauty and hand creams, cream shampoos and topical ointments and salves of many varieties.

Food items whose appeal will be enhanced by free-piston packaging include cheese spreads and dips, mayonnaise and cream-type salad dressings, cake icings, sour cream, butter, toppings, sauces and condiments. The free-piston container fitted with a decorator nozzle tip makes possible the preparation of attractive and appetizing foods with little ex-

* Research & Development Dept., Canco Div., and † Vice President, Bradley-Sun Div., American Can Co., New York.

[1] Numbers in parentheses identify References appended.

[2] MiraFlo is a trademark of American Can Co. The Bradley-Sun Div. manufactures the container.

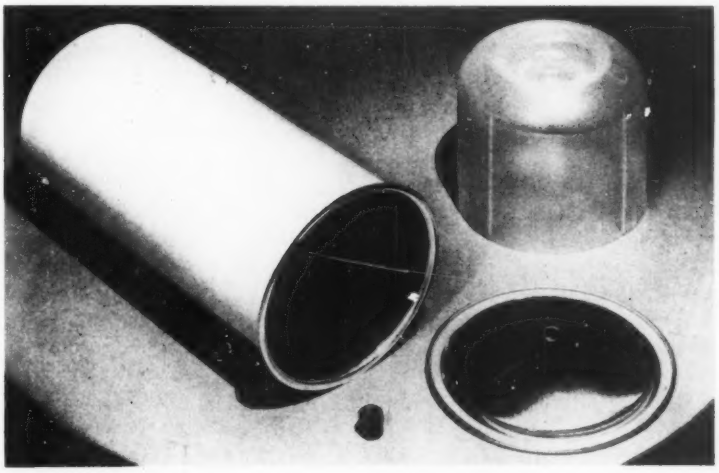


Figure 1. *Special components of the MiraFlo free-piston pressure container, which uses a conventional one-piece impact-extruded aluminum body shell. Injection-molded polyethylene piston, in shape of cup open at bottom, is inserted in open base of container and the perforated, concave, metal bottom end is double seamed in place. Rubber plug is inserted after filling and gassing of the container.*

Figure 2. *Three viscous food products suitable for free-piston aerosol are demonstrated here. The product is expelled 97% complete and without the foaming characteristic of conventional aerosols.*

penditure of time or effort. Three uses of the container for food items are illustrated in Figure 2. Small quantities of product may be dispensed from the container without exposing the entire contents of the container to possible oxidation and contamination. This feature will be of value in the packaging of both food and pharmaceutical products.

Considerations

When attempts are made to dispense a viscous material from a conventional aerosol container, which usually must be held upright for dispensing, it is found that the propellant (usually a compressed gas of low product solubility) tends to channel through the product and escape through the valve. In the case of slow-flowing materials, the product may cling to side walls of the container. In either event, the resulting effect is a high product retention in the exhausted container. Some effort has been made to eliminate this difficulty by product reformulation to lower viscosities. However, the required changes in the characteristics of the product may reduce consumer acceptance of the product.

In developing a pressure container for viscous products, consideration must be given to factors that determine manufacturing and packaging feasibility as well as consumer acceptability. These factors are:

1. Original appearance as well as the physical characteristics of the product should be retained after it has been dispensed.

2. Product retention in the exhausted container must be held to an acceptable minimum.

3. Container operation should not be impaired by conditions which might be encountered during its service life, such as position of storage, minor denting and extremes in temperature that occasionally occur in normal handling.

4. Package must possess reasonable shelf life: (a) product breakdown must not occur during long-term storage under pressure and (b) container components must be resistant to attack from product.

5. It must be economically feasible to manufacture and to sell the container.

6. Design of the container should allow for packing without the necessity for any major changes in conventional aerosol filling lines.

Design concepts

The design of the MiraFlo free-piston container has been guided by the preceding requirements. Its component parts are shown in Figure 1.

Previously, attempts to develop a pressure container for viscous products had been directed toward a two-compartment container. The objective was to effect complete separation within the container of the propellant from the product.

In general, there have been two approaches in experimental efforts to design a container of this type. One incorporates a plastic bag within a rigid container to maintain separation of product and propellant (2). In the other approach (3), a tight-fitting piston divides the container into product and propellant spaces. The piston, pushed by the propellant, acts as a plug to force product toward the top end of the container when the valve is actuated.

The MiraFlo free-piston container is basically different from other piston containers and from the bag-in-the-can in that the product and propellant spaces are not completely sealed from each other. This condition is achieved by the use of a plastic piston insert whose diameter is slightly less than the internal diameter of the body shell. The shape of the piston is essentially that of a cup whose open end rests on the bottom of the container. Other component parts of the container are an impact-extruded aluminum body or shell and a concave aluminum end into which a small aperture is pierced for gassing the container. A rubber plug, inserted into the aperture after gassing, seals in the propellant.

Utilization of the product as a sealant between the container wall and the piston is the basic concept from which the development of this free-piston

container has evolved. The viscous nature of products for which this container is intended makes them ideally suited to function as a seal. They can form a seal effective in preventing the escape of propellant through the product when the valve is actuated.

Application of principle

With the loose fit of the free-piston construction, there is little frictional resistance for the piston to overcome as it travels toward the top of the container as product is expelled. Many products also aid in the reduction of friction by acting as a lubricant during the piston travel.

A combination of two factors—the use of a piston which is loose fitting and the use of a flexible plastic material such as polyethylene—reduces the susceptibility of the container to failure from denting abuse. Tests have shown that the container will still function without piston hang-up when it has been subjected to rather severe denting.

The large number of viscous products that can be packed in the free-piston container range in variety from printing ink and calking compound to cosmetics, pharmaceuticals and foods. This development opens a wide new field for packaging exploitation by the aerosol container.

A conventional aerosol container packed with a viscous product must be dispensed in an upright position, or propellant loss may occur because product contact with the dip-tube opening is assured only in the upright container position. Also, horizontal storage may cause propellant loss if the valve is actuated too soon after removing the container from this position, as the product may flow too slowly toward the dip tube. The free-piston container construction, which uses no dip tube, eliminates these difficulties, since product contact with the valve opening is maintained in any container position.

The free-piston container is very effective in expelling a high percentage of the container's net contents. It will dispense up to 97% of the fill weight of the product. Absolute retention weights depend upon the density of the product.

Another feature of the free-piston container construction is that the piston seals against the top of the container and prevents loss of residual propellant after all product has been expelled. This is a definite advantage, since a gas discharge at the end will cause splattering and possibly undesirable changes in product appearance.

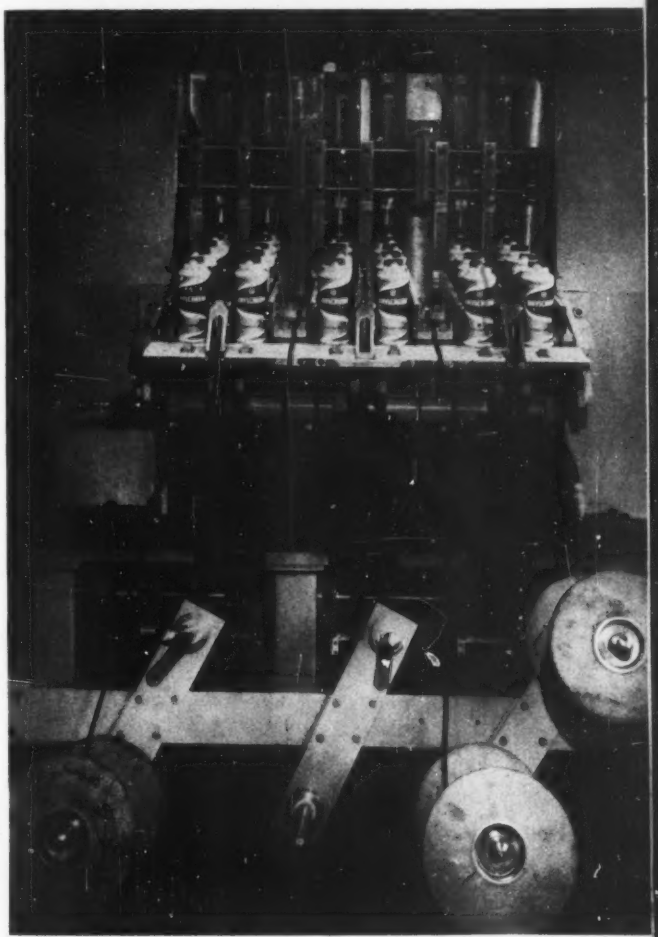
Description of components

The impact-extruded aluminum shell and bottom end have been described by Jackson (4). In the Bradley-Sun process, the extrusion produces a shell which is open at the bottom end. At the top end, the container walls blend into a shoulder which supports a 1-in. neck opening.

After extrusion, the open end is trimmed to the correct length and is flanged, in order to receive the bottom end for double seaming. The 1-in. neck opening is trimmed to provide proper diameter and proper contour for standard 1-in. cups. The container shell is presently being produced in a nominal 6-oz. size, 202 ($2\frac{1}{8}$ in.) diameter.

Lubricant and other extraneous matter is then washed from the shells to prepare them for enameling and decorating. If an inside enamel is to be used, it is sprayed into the shells and baked(5). The external decorative coating and print is applied in a coating machine while the shells are supported on

Figure 3. *Filled cans leaving the special gassing and plugging machine developed for free-piston container. Note rubber cord, which is automatically cut off to plug bottom holes, entering machine from the reels.*



mandrels. The external coating, including a resistant finishing varnish, is also cured by baking.

The bottom ends are die fabricated in a punch press when the ends are stamped from aluminum sheet which has been coated in the flat. Both internal coatings and external coatings may be applied if required. The ends are lined with a sealing compound. For use as a conventional pressure container, the bottom end is double seamed to the shell to complete the two-piece container.

For the free-piston container, the end is pierced in the center by a 0.140-in. aperture. This aperture is flared so that a small shoulder is raised on the inside. This provides added grip on the rubber plug.

The container has been designed to achieve a bursting strength in excess of 250 p.s.i.g. Buckling resistance of the bottom end is in the same range. The strength has been achieved by the use of wall thicknesses that are substantially greater than those for tinplate containers and by the selection of the proper alloy, temper and contour for the concave bottom end of the container.

The one-piece plastic piston is injection molded from low-density polyethylene. It is essentially a hollow cylinder which is closed at one end. The closed end is contoured to fit the top end of the container when a valve in a 1-in. cup is crimped in the 1-in. cup opening. This closed end section has sufficient thickness to make it fairly rigid and to prevent it from being subject to distortion.

The container's side wall or skirt is somewhat thinner and is quite flexible. The length of the skirt is about 1.5 in. and the over-all height is 2 in. Piston dimensions allow approximately a 4.5-fluid-ounce fill in the 6-oz. aluminum container. Other densities of polyethylene and other plastics can be used, depending upon the application.

The rubber plug is a section cut from an extruded rubber cord. It is approximately $\frac{3}{16}$ in. long and $\frac{7}{32}$ in. in diameter. Extensive testing of rubber-plug performance shows that it will retain compressed-gas propellants satisfactorily over long periods of time. The blow-out pressure of the plug from the aperture exceeds the buckling resistance of the container. Specifications that have been established for physical properties of the rubber cord assure consistent physical performance. The choice of rubber compound for plugs may vary with the product. One that offers the best resistance to attack from vapors of the particular product being packaged should be selected.

The assembly of the free-piston container is similar to that of the conventional aluminum pressure container, except for the addition of the piston-insertion step. The inserting mechanism orients the piston so that the closed end leads into the shell. A bottom end with center aperture is then double seamed to the shell. This is done at the can plant prior to shipment of the container to the packager.

Filling procedure

In general, the sequence of filling steps for the free-piston container is the same as that followed on a conventional aerosol filling line. The product is filled through the 1-in. cup opening and the valve is crimped in the opening.

Filling can be accomplished with commercially available viscous-products fillers. A filler equipped with a nozzle that enters the container and fills from the bottom as the nozzle is withdrawn is desirable so that no air bubbles are entrapped in the product. The product must fill the container up to the 1-in. cup opening, leaving only enough space to seat the 1-in. cup of the valve assembly. For products that are not subject to heat damage, it may be advantageous to heat the material to a more fluid state for filling. Most heated products will congeal in the container-wall area soon after filling, so there is no danger of fluid material seeping past the piston.

Pressurizing

Gassing of the container is accomplished with a special gassing and plugging unit which was developed for this purpose by the American Can Co. (Figure 3.) With this unit, the gas space can be vacuumized, pressurized, then sealed with a rubber plug which is automatically inserted by the machine before the pressure is released.

The essential operations of the gassing and plugging unit in pressurizing the container are as follows: The can bottom is held tightly against a chuck which has an orifice centered in it. The peripheral area of the orifice seats against the corresponding area around the bottom-end aperture. The gas space is then vacuumized and pressurized. While the container is under pressure, a rubber plug is pushed through the chuck orifice and inserted in the bottom-end aperture. The plugger cuts the plug from a continuous length of cord and carries it to position for insertion in the can bottom end.

The vacuumizing step can be omitted if desired. However, when packing highly viscous materials, the vacuum will help the product to flow into the space between the upper portion of the piston skirt and the container wall. This enables the product to form an effective seal in this area.

Vacuumizing is required when packaging oxygen-sensitive materials. The propellant comes in contact with the product around the side wall of the container and there may be oxygen transfer through the piston. To reduce oxygen content to very low levels, an inert gas pre- [*Continued on page 209*]

Bioriented polypropylene film

Important gains in tensile strength, barrier properties, low-temperature performance and other packaging attributes are found to result from orientation. ***By John F. O'Donnell* and J. Thomas Selldorff†***

Commercially practicable polypropylene film is of great interest in packaging because of the high coverage per pound of this lightweight plastic and its present and potential low cost. Orientation significantly improves some of the packaging properties of the film. This is the first full technical report on a biaxially oriented polypropylene film now commercially available.—ED.

A year ago, The Kordite Co. announced the commercial debut of biaxially oriented polypropylene film. In many product areas the horizons for this newest member of the polyolefin family—designated as "Kordite[1] 1000" (uncoated)—have been substantially broadened through application development and through end-use research.

With a yield of 40-60,000 sq. in. per pound, depending on gauge, and a coverage cost in the range of 2.5 cents per 1,000 sq. in., this film is obviously a strong candidate in a variety of applications, mainly in the field of consumer packaging.

Oriented polypropylene film is already being employed in the manufacture of bags where strength, clarity, gloss and resistance to both abrasion and aging are important. As a protective and decorative overwrap, the film is an important candidate for many products now packed in cellophane.

Orientation of a plastic film is accomplished by stretching the film in the machine direction or in the transverse direction, or both. This changes the polymer molecules from a random-position distribution to alignment in the direction of the orientation. This may change the film properties greatly.

Most commercial plastic films are slightly oriented or stretched. For instance, cast polyethylene and polypropylene films—which are normally considered unoriented—are stretched slightly in the machine direction during the casting process. However, polypropylene lends itself to much more orientation (fourfold to eightfold) than is obtainable in the casting process alone. This requires an extra processing step. Such processing may be designed to produce equal orientation in both the machine and the transverse directions, or a greater amount in one direction, depending on end-use requirements. The value of this additional processing

*Director of Commercial Development and †Group Supervisor, Commercial Development, The Kordite Co., Macedon, N. Y.

[1]Registered trademark of The Kordite Co.

Figure 1. *Ease of tear-strip opening is one advantage that can be imparted by orientation. Package at top, wrapped with ordinary cast polypropylene, is difficult to tear. Tear-tape opening is quick and easy with packages, center and bottom, wrapped in Kordite 1000 oriented polypropylene.*

is shown in Table I, which compares tensile strength and other properties of two types of biaxially oriented film with those of cast polypropylene. For reference purposes, properties of medium-density polyethylene film and cellophane are also shown.

It should be noted that oriented films from different manufacturers may vary considerably in the degree of orientation, physical properties and "balance," i.e., the symmetry of physical properties in the machine and the transverse directions.

Advantages of orientation

Additional processing of polypropylene film obviously adds to manufacturing cost per pound, but also substantially improves film properties. This makes possible the use of thinner films and will actually result in lower coverage costs in many markets. Careful examination of the contribution of orientation to each property of the film is an extremely important matter.

Tensile strength and modulus of elasticity. Increase in tensile strength through orientation is accompanied by a sizable increase in modulus of elasticity and, therefore, in stiffness, compared with cast polypropylene. The result is superior protection of package contents with the use of thinner, more economical type of films.

Kordite 1000 has been found to be superior to cast film in puncture resistance. This is illustrated by the F_{50} values obtained on a Dart drop test (ASTM D1709-59T, modified to use 18-in. drop height rather than the 26-in. height):

1-mil cast polypropylene $F_{50} = 195$ gms.
0.5-mil Kordite 1000 $F_{50} = 275$ gms.

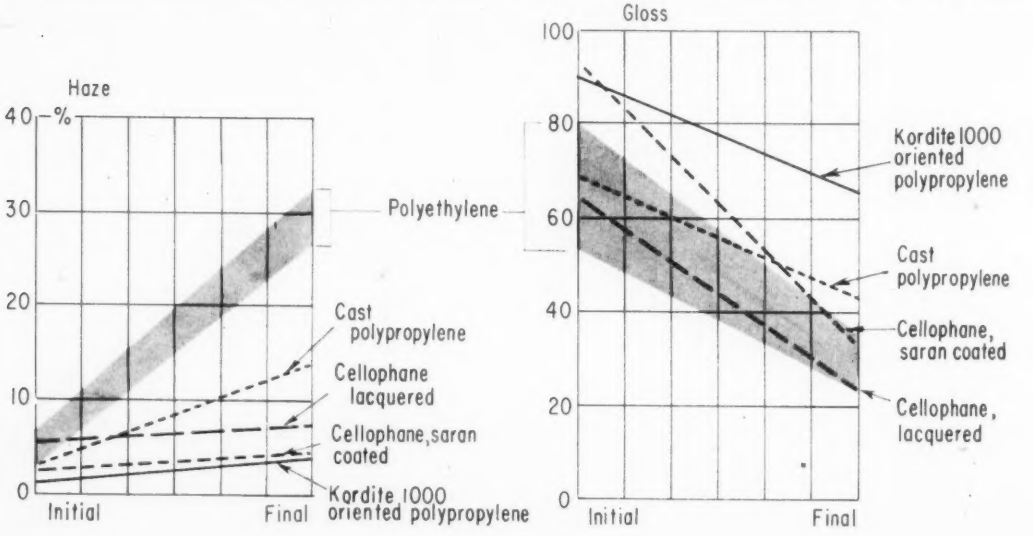
Barrier properties. Orientation approximately doubles the resistance of polypropylene film to transmission of water vapor and gases. (Some of these data are also shown in Table I. Tests on gases other than oxygen have given similar results.) Grease resistance of polypropylene, which is greatly superior to that of low-density polyethylene, is further increased twofold or more by orientation.

Low-temperature properties. Kordite 1000 retains high impact strength at below zero deg. F. Even at dry-ice temperatures (minus 110 deg. F.) pouches made of this film survived a 36-in. drop onto a hard surface without breaking. Cast polypropylene will become brittle at approximately 32 deg. F.; packages wrapped in cast film must be handled delicately when exposed to freezing temperatures.

Resistance to abrasion. Orientation improves film surface characteristics so that clarity is retained longer under abrasive conditions than with other commercial polyolefin films. Sugar-coated gum drops, considered to be severely abrasive, were chosen for a simulated use test. After being tumbled 100 times, bags made of Kordite 1000 showed less haze and superior gloss compared with bags of premium cellophane, cast polypropylene and polyethylene (see Figure 2).

The test was conducted as follows: Five-by-eight-inch bags were made of each film. All seams were reinforced with tape to eliminate seal failures during tumbling. Bags were filled with equal amounts of sugar-coated gum drops and placed loosely in a container lined with low-density polyethylene to minimize external scratching of bag surface. The container was closed and the assembly rotated at 12

Figure 2. Effect of tumbling on haze and gloss of bags filled with sugar-coated gum drops (100 cycles)



r.p.m. for 100 revolutions. All bags were removed, carefully opened and emptied, and film samples taken for measurement of optical properties. The haze and gloss of films were measured according to ASTM D-1003-52 before the bags were made and on samples taken from each bag after the test. Bags were wiped free of residual dust with a soft cloth.

Taber abraser tests made at the Kordite Product Test Laboratory (ASTM D 1044-56) confirmed the relative abrasion resistance of the various films.

Tear strength. Although oriented polypropylene films are tough—as shown by impact resistance—the film tears readily once a tear has been initiated. Thus tear tapes, similar to those used with cellophane, can be used. This is an important property, since the handy tear tape used with millions of cellophane-wrapped packages (for example, in the tobacco industry) has become a package requirement. Figure 1 compares the use of a tear tape on identical packages, one wrapped in Kordite 1000 and the other in cast polypropylene. Though the high tear resistance of unoriented polyolefin films is an asset in some packaging applications, for packages like those shown, this tear resistance is a liability.

For film comparison, Elmendorf tear-test values (ASTM E 689-44) are listed in Table I.

Dimensional stability. The ability of oriented polypropylene film to remain flat and undistorted, despite variations in humidity, temperature and age, is a very desirable attribute. Kordite 1000 is an unplasticized polyolefin film that remains unaffected by moisture, permitting indefinite storage. Although it might be expected that an oriented film would be poor in dimensional stability at higher temperatures, Kordite 1000, by suitable processing, has been designed to remain dimensionally stable at temperatures above the boiling point of water. In routine quality-control tests conducted at Kordite, the film must exhibit less than 1.5% shrinkage on exposure to air at 225 deg. F. for 5 minutes. In contrast, cellophanes require comparatively precise temperature and humidity control during storage, printing and use. Cellophanes—especially the lower-priced series—dry out and embrittle with age.

Accelerated aging tests (ASTM D-756-50, Procedure I) have also shown oriented polypropylene to be superior to cellophane and cellulose acetate films in dimensional stability. Samples of film were exposed at 140 deg. F., 90% R.H. for 24 hrs., followed by 140 deg. F., dry, for 24 hours. Cellulose acetate had a pronounced tendency to curl; the cellophane distorted badly, and Kordite 1000 developed only slight distortion in this test.

Optical properties. The most readily observable qualities of any film are its sparkle and transparency. Beyond the protective qualities of transparent films, packagers look for clear, glossy films which enhance the point-of-purchase appeal of the packaged product. Appearance is measured by (1) the specular gloss, compared with a standard; (2) the clarity—or per cent haze—which represents the scattering of a light beam passing through the film, and (3) color. Kordite 1000 is colorless. Other optical properties, as shown in Table I, are better than those of most unoriented polyolefin films and

Figure 3. *Shrink films can be made of oriented polypropylene, compared here in identical applications with oriented polyethylene and oriented PVC.*

Figure 4. *A variety of bags and pouches can be made with oriented polypropylene film. Twist-closed bags, header labels, heat-sealed closure are among those shown.*

Table I: Effect of orientation on properties of polypropylene films.

		Kordite 1000 oriented polypropylene film	*Kordite experimental oriented polypropylene film*	*Cast polypropylene films (typical)*	*Kordite 110 medium-density polyethylene film*	*MS 53 cellophane*
Gauge (mil)		0.5	0.5	1.0	1.25	1.0
Tensile strength (p.s.i.)	MD	8,000	26,000	5,700	2,600	20,000
	TD	40,000	22,000	3,200	1,900	10,000
Tensile modulus (p.s.i.)	MD	150,000	340,000	96,000	35,000	570,000
	TD	400,000	330,000	98,000	42,000	296,000
Elongation (%)	MD	300	80	425	480	18
	TD	40	65	330	590	50
Initiated tear strength	MD	12	7	50	70	4
(gm./mil)	TD	8	7	550	230	6
Haze (%)		0.5-1.5	0.5-1.5	0.5-3.5	4-5	3.0
Gloss (45-deg. head)		>80	>80	75-80	75-80	81
WVP (100 deg. F., 90% R.H.) gm./100 in.²/24 hr./mil		0.35	0.35	0.76	0.85	0.2-1.0*
Oxygen permeability, cc.-mil/100 in.²/24 hr./atm.		150	150	245	350	15**
Low-temperature toughness		Excellent	Excellent	Becomes brittle at freezing temperatures	Excellent	Becomes brittle at freezing temperatures
Coefficient of friction		0.4-0.5	0.8	0.4	0.25-0.30	0.3

* Subject to substantial increase (up to tenfold) when creased.
** Dependent on moisture content.

Figure 5. *Sparkling clear oriented polypropylene film, uncoated, can be used to overwrap packages when some heat-seal distortion is permissible, as with the underfold-sealed packages illustrated here.*

closely approach those of the best cellophanes.

In recent years, extensive work (1)[2] in extrusion technology has shown that haze and gloss of both polyethylene and cast polypropylene films can be varied over a wide range by altering processing conditions. With cast polypropylene films, improvement in optical properties often involves a sacrifice in other desirable features. Cast films of excellent clarity have been made from this resin. However, these films are often relatively limp and tough, and present cut-off and feeding problems on automatic equipment. When extrusion conditions are altered to raise crystallinity and produce a stiffer, more "machinable" film, optical properties can suffer.

Printability. After proper surface treatment (which may be accomplished by methods such as those used on polyethylene films) Kordite 1000 films can be printed with inks supplied by most major printing-ink manufacturers. These inks are generally similar to those used to print polyethylene. Continuing tests at Kordite indicate that deterioration of the treatment is quite slow and treated films stored for a period of more than three months have maintained an acceptable degree of ink adhesion.

Shrink film. There is every reason to believe that oriented film can be designed with 30-40% shrink, for use in the rapidly growing field of shrink pack-

[2] Numbers in parentheses identify References appended.

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* MARKETING RESEARCH ASSISTANCE

The customer's reaction being recorded here by a member of a Ball marketing research team could very well improve the sales appeal of your package. Through the years, our continuing alertness to the buying trends and the ever-changing attitudes of the consumer has given us a wealth of information to assist you in strengthening your product impact at the consumer's all-important moment of decision.

Your Ball representative will be glad to tell you how Ball can become your working partner in the development of the best package for your product. Ball Brothers Company Inc., General Offices, Muncie, Indiana

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Ball YOUR PARTNER IN PACKAGING PROGRESS

Figure 6. *These loaves illustrate the wrap which is achieved on a production basis with an AMF 3-175 bread wrapper, using uncoated oriented polypropylene film.*

aging. Figure 3 shows a comparison of Kordite's experimental shrink films with other commercially available shrink films. While shrinking conditions no doubt will be somewhat different for shrinkable oriented polypropylene film, appearance of the final package made from this material is acceptable.

Recent market developments

During the past year, the pattern of end uses for Kordite 1000 has become more evident. There appear to be two main avenues for its use:

1. Converted products. Oriented film can be processed further, either by coating, by laminating or by fabrication of a variety of bags.

2. Direct application. The film can be employed directly, generally on equipment that has been especially modified to handle oriented films.

Converted products. Kordite 1500 is a two-side-coated film intended for use on many of the packaging machines designed for cellophane. (Kordite 1250 is coated on only one side for certain specialized uses.) Initial response from the packaging industry to the announcement (in April, 1960) of coated oriented polypropylene film was extremely encouraging. Considerable demand exists for a coated, heat-sealing oriented polypropylene film to serve as a general-purpose overwrapping medium on the thousands of machines not designed to handle thermoplastic films. The cigarette industry in particular is considerably interested in such a film.

The coating formulation used at that time was prone to blocking during hot, humid summer months and required modification. Since then, Kordite's coated films have been materially improved. Field tests are now in progress on films with modified coatings: Kordite 1500J and Kordite 1500S. The latter provides extremely low gas, moisture and flavor transmission. When field testing of these films has been concluded, complete details of the results will be released.

Bags. A major segment of the converted-products market for Kordite 1000 film is represented by bags. A sizable tonnage of the film is currently being sold in this form. The film can be fabricated into bags on glue-sealing and heat-sealing equipment. Most of the common closure techniques either can be applied to the bags directly, or can be modified readily for use with this film.

Vented glue-sealed bags made on Holweg and on Fisher-Krecke machines at commercial speeds normally used with cellophane have found excellent acceptance for bagging moist produce items such as lettuce, grapes, cabbage, celery, etc.

Duplex bags (paper bags lined with film to protect the contents) have also been made commercially on Holweg, Potdevin, Weber and similar bag machines. For products like cookies and coffee, the improved product protection provided by an oriented polypropylene film liner is very desirable. For instance, duplicate samples of cookies were shipped, then stored in duplex bags lined with Kordite 1000 and with cellophane in a humidity cabinet at 100 deg. F. and 95% R.H. for two weeks. At the end of that period, the average weight gain for the cookies stored in cellophane was 2.8%. Those stored in oriented polypropylene gained only 1%. The ability of oriented film to withstand breakage at low temperatures is a major advantage here.

In the above applications, cost savings over films like cellophane are not only direct, i.e., in film cost, but indirect as well, i.e., lowered freight cost and fewer roll changes at the bag machine.

Developmental work is now under way on side-seal bags made of oriented polypropylene film using standard side-seal machines (Schjeldahl and Simplex). At present, applications for these bags are limited to relatively light products such as hosiery and soft goods, where the film's sparkling optical properties and long shelf life are important.

Closing bags at point of use. A large variety of methods have proved satisfactory for closing the types of bags mentioned above. Heat-sealing machines, saddle labels and such methods as "Twist-ums," tape or "Tupperties" may be used. Figure 4 shows closures made on oriented-film bags.

Laminations. Oriented polypropylene film can be used as a superior, low-cost, protective laminating medium. In this market, cellulose acetate film traditionally has played a major role. Book covers, record jackets and cal- [*Continued on page 203*]

Cut in on this market...

TEEN-AGERS SPEND $9 BILLION
The teen-age population now numbers more than 18 million and spends about 9 billion dollars annually, according to a recent survey by a large research organization. The teen-age group now accounts for about 10% of the population. It is estimated that by 1970 the number of 15- to 19-year-olds will have increased by 63%.
The teen-ager income averages more than $10 a week, with approximately a third of it earned. High on the list of items that teen-agers spend their money on are: cosmetics, clothing, entertainment and food.
Cosmetic makers count on teen-agers for at least $300 million worth of annual purchases. Movie companies depend on teen-agers to fill half the nation's movie seats. Record companies estimate that this younger generation buys up to 90 per cent of the single record releases and 50 per cent of the albums.

Twenty million teen-agers with more than 9 billion dollars in their pockets are wanting, buying and using many kinds of products. They have a world of their own, these teen-agers. They have their own clothing styles, their own hair styles.

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ENGINEERING

Wax-laminated carton

The new Grape-Nuts package is a single-wall barrier carton: it eliminates an overwrap, has sales and consumer advantages and adds shelf life up to 30%. By Walter C. Utschig*

The successful package in today's sales climate must meet a great many different requirements, among which are: impulse-sales appeal, end-use convenience, protection to the product before and during its use cycle, pleasing appearance in the home and economy. No longer can the grocery manufacturer expect an established brand image to make up for an obsolete package.

The Post division of General Foods Corp. recognized this, as well as the fact that many marketing disadvantages associated with the waxed-paper overwrap used on the Grape-Nuts cereal carton could be eliminated by using a printed, wax-laminated carton without overwrap.

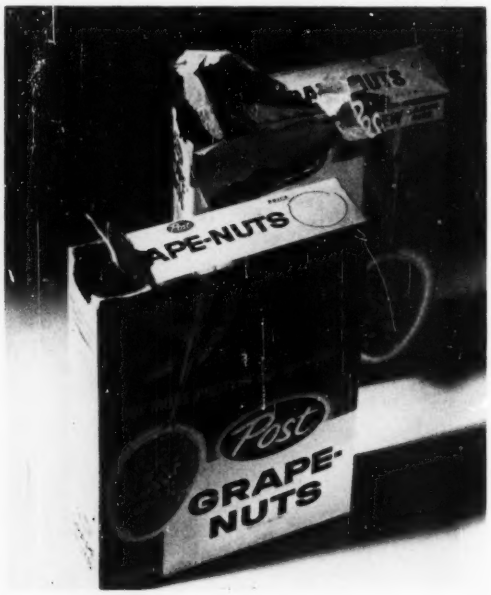
As a result, a joint development program was undertaken by the Carton & Container and Post divisions of General Foods to identify and evaluate the use of a wax-laminated carton which would replace the waxed overwrap.

The old Grape-Nuts package consisted of an unprinted, newsboard shell overwrapped with an opaque waxed paper. The new Grape-Nuts package is a wax-laminated, single-wall carton consisting of a 33-lb. (3,000 sq. ft.) opaque converting paper, which has been wax laminated to a special laminating-grade cylinder board.

This is the story of that development from the standpoint of raw-material properties, converting specifications and manufacturing problems.

*Research Project Leader, Carton & Container Div., General Foods Corp., Battle Creek, Mich.

Figure 1. *The new wax-laminated, single-wall carton (foreground) offers improved appearance and convenience in use as compared with old wax-overwrapped newsboard carton. Production is simplified and product shelf life is extended.*



Product protection

The first step in our program was to determine the level of water-vapor protection required in a laminated structure to result in a finished package which would offer as much water-vapor protection as the overwrapped carton. The results of these tests (see Figure 2) showed that a laminated structure with a flat water-vapor-transmission rate of 0.70 gm. 100 sq. in./24 hrs. and a GF creased rate of 2.5 gms./100 sq. in./24 hrs. (Appendage 1) offered 15 to 30% longer shelf life than the control overwrapped cartons. The waxed paper used in the overwrap carton had a WVT rate of 0.30 gm. flat and 3.0 to 10.0 gms. (TAPPI) creased.

Package tests also were conducted on cartons made from laminated board having WVT rates ranging from 0.05 to 1.5 gms./100 sq. in./24 hrs. These tests showed excellent correlation between package protection of a linerless, laminated carton and the base WVT properties of the laminated structure when the WVT was 0.3 gm. or above. There was very poor correlation, however, between WVT and linerless-package protection when the WVT of the base structure was below 0.3 gram.

Recent work has confirmed these original findings and has shown that other mechanics of water vapor entering a linerless carton are of sufficient magnitude to dampen out differences in WVT through the structure's walls when the water-vapor

transmission rate is in the area of 0.20 gm. or less.

The laminated cartons used in these tests were full-flap cartons sealed on the side seam and flaps with a dextrin adhesive. The cartons were run on a Stokes & Smith packaging machine at a speed of 245 cartons per minute.

Materials. Considerable effort was required to identify materials which would meet all of the basic requirements necessary to produce economically a quality laminated cereal carton from a web-fed operation. Some of the material requirements are:

PAPER

1. Acceptable surface for process printing and lacquer hold-out.
2. Wax repellency on back side.
3. Good dimensional stability.
4. High brightness and opacity.
5. Sufficient strength for scoring the material without cracking.
6. Good moisture control (maximum deviation ±0.3%).

BOARD

1. Good wax repellency.
2. Uniform caliper and good surface smoothness.
3. High resistance to bending.
4. Good score-breaking properties.
5. Good moisture control.
6. Acceptable gluing characteristics.
7. No objectionable odor.

LAMINANT

1. Good adhesion from zero to 125 deg. F.
2. Minimum bleed for extended periods of time at a temperature of 125 deg. F.
3. Good WVT properties, flat and creased.
4. No objectionable odor.

Laminating

To produce consistently an acceptable wax-laminated carton, it was necessary to obtain basic data on the factors responsible for WVT. One of the first areas investigated was the effect of varying amounts of surface laminant on a flat WVT. The results of this investigation are shown in Figure 3. Note that there was a very sharp increase in WVT when the surface laminant fell below 8.0 to 9.0 lbs./3,000 sq. ft.

Flat WVT is primarily a function of the continuity of the protective barrier. The amount of internal laminant has essentially no effect on a flat WVT. With the materials and process used in these trials, the film started to become discontinuous when the surface laminant fell below 9.0 lbs. The point at which a given amount of surface wax becomes discontinuous depends on many factors. Some of these are the viscosity, temperature and type of laminant, as well as the evenness with which the original film

FIG. 2

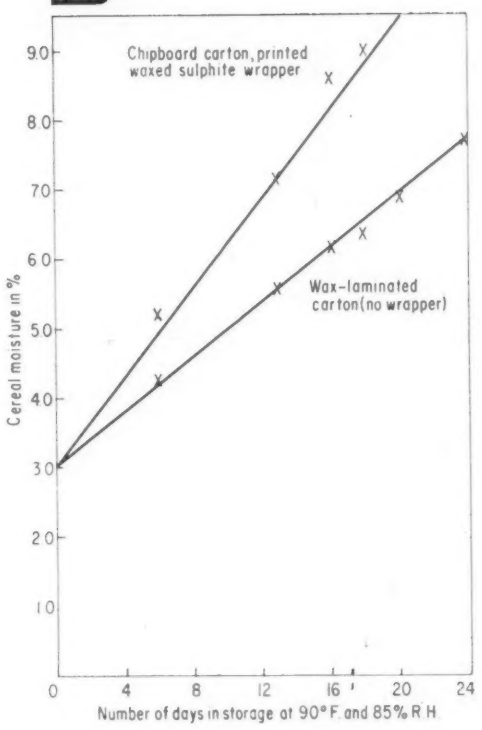
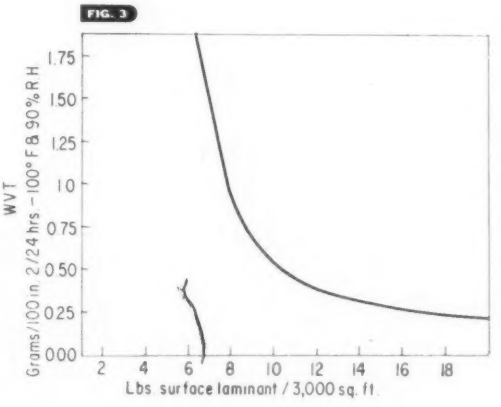


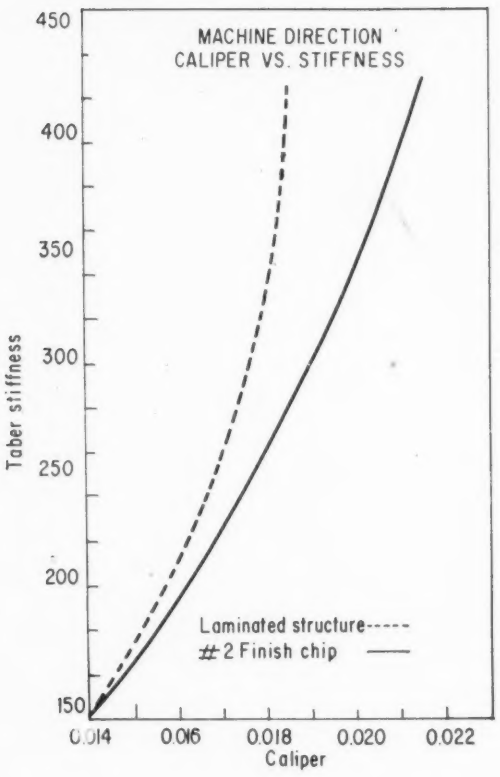
FIG. 3



was laid down and the effectiveness of any smoothing of the laminant film.

Also of major importance are the smoothness of wax hold-out properties of the base sheets being laminated. The significance of the smoothness of the base stock is somewhat dependent on the basic laminating process. For example, the wax will take on the smoothness of the laminating films if the laminating process is such that the wax laminant

FIG. 4



is still in a malleable state when it enters the combining nip. If the laminating process is such that the laminant is partially set when it enters the combining nip, the smoothness of the ply being applied has little effect on film continuity.

There are various techniques used in the industry today to smooth laminating films; however, most of them fall far short of insuring the smooth, continuous film necessary for product protection. The Carton & Container Div. is currently investigating several new approaches to this problem and results today are very encouraging. Indications are that with improved smoothing techniques, surface laminant can be reduced up to 25%, with the resulting product having less variation in WVT properties.

In summary, the factors involved in obtaining good laminant film continuity are as follows:

1. Rheological properties of laminant.
2. Smoothing of laminant.
3. Smoothness of materials being laminated.
4. Method of laminant application.
5. Combining-nip pressure.
6. Laminant viscosity at combining nip.
7. Rate of cooling.

One of the major problems encountered in this development was the identification of a routine control test for evaluation of WVT. The standard TAPPI WVT test required a minimum of 48 hrs. and was of little value as a routine, production-control method. A test procedure was identified which was suitable as a control method and would pick out laminations having WVT rates exceeding 0.8 gm. This is a wax-continuity test and is conducted on a routine basis by quality-control inspectors and these data are used to augment the TAPPI Standard WVT tests. (Appendage 2.)

Consumer acceptance

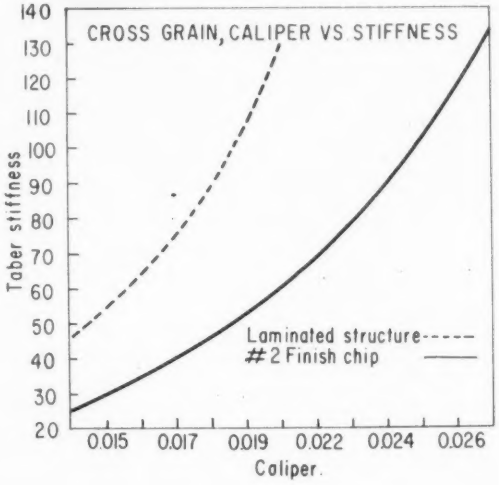
The wax-laminated carton also provides some desirable marketing features. One of the deficiencies of the overwrapped carton was its poor appearance in the home after being opened (see Figure 1). Removing or tearing the overwrap also reduced or eliminated the protection provided to the product during its home-use cycle. The wax-laminated carton corrected both of these problems and also improved the appearance of the package on the shelf.

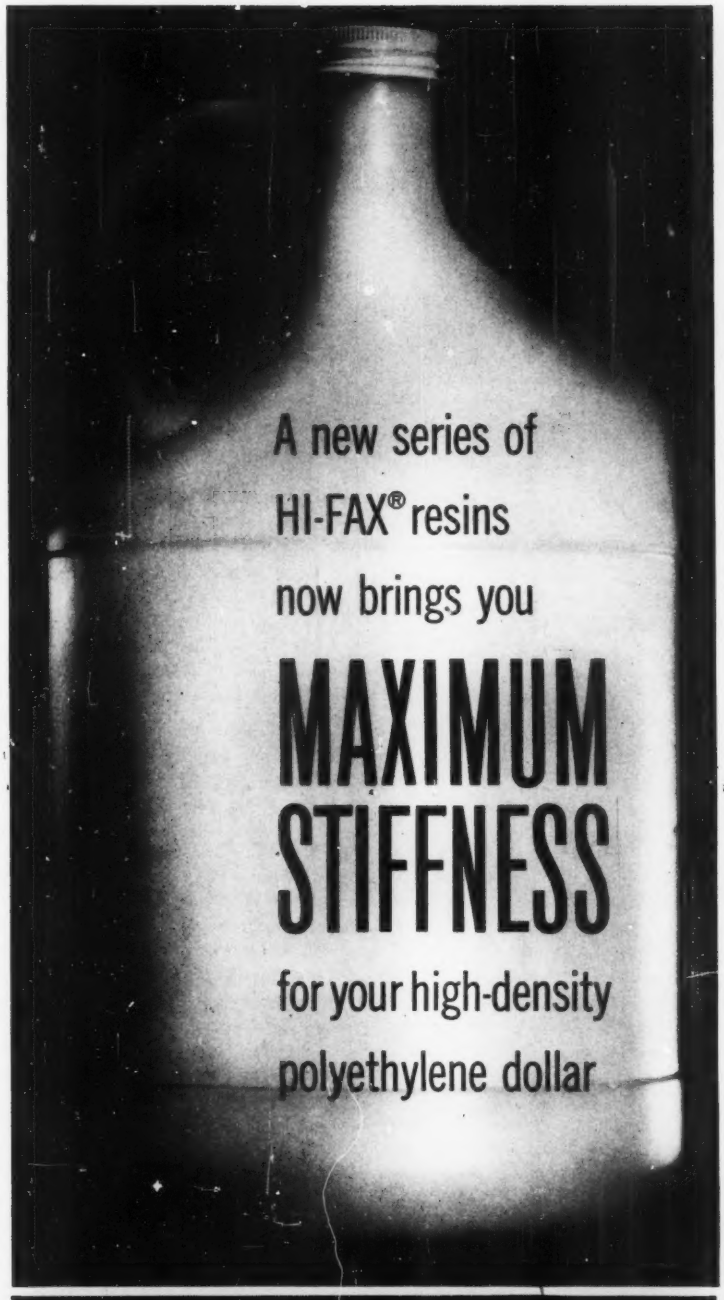
Packaging costs

Packaging-line speed and efficiency are becoming a bigger part of the total packaging-cost picture due to rising overhead in most companies.

The old overwrapped Grape-Nuts carton required two overwrapping lines to keep up with the carton-forming and filling operation. When the Grape-Nuts package was changed to that of the printed, waxed-laminated carton without overwrap, the forming and filling operations were speeded up by approximately 30% and the two overwrapping lines eliminated. This resulted in significantly reducing labor costs as well as increasing packaging-line efficiency and reducing product [*Continued on page 191*]

FIG. 5





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Temperature-control packing

Q: *We have developed a new pharmaceutical product that is an emulsion. The package will be a glass bottle with a screw cap. Our tests show that the package performs well and that the product has good shelf life, but there is one problem.*

If this product is exposed to temperatures below 28 deg. F., the emulsion breaks and the product is no longer effective; in fact, its use could have serious consequences.

We would like to ship this product nationwide and our problem is: Can a shipping means be found that would not let the product become any colder than 28 deg. F.?

A: First, you should know the basic fact that no shipping case, insulation or similar combination will safely protect this product nationwide in any weather and in common carriers. A highly insulated case, plus special jackets would only be useful for short-time temperature protection for controlled shipments of your drug product.

It is assumed that your laboratory is doing serious work in an effort to lower drastically the minimum temperature at which this product will maintain its effectiveness and also to improve the stability of the emulsion against low-temperature deterioration. Such product improvement is the best answer to your problem and is, in fact, the most reliable and lowest-cost answer.

If you intend to place the present-type product on the market, it can only be safely shipped in a well-insulated case, with rigid and complete shipping controls, and a willingness on your part to accept the costs and the losses. Even using the controls mentioned, you should not make winter shipments in northern areas except in an emergency.

Since this product is an emulsion, it should be visually apparent when the emulsion is broken. Therefore, you should add a label prominently placed on the container and carefully worded to help the user reject a spoiled package.

Temperature indicators, heat reservoirs, warning labels and other such devices are not reliable answers, because their positioning on the container is critical or their protection is limited time-wise.

This problem is serious because the spoiled product should not be used and because a temperature of 28 deg. F. is too easily reached in uncontrolled winter shipping.

The best answer is to improve the product radically. Until then, you must rigidly control and police all shipments in cold weather.

Thermoplastic bread wraps

Q: *We have heard a lot about thermoplastic films for bread wrapping. What is the easiest way of using these materials on our product?*

A: If you are looking for a pat answer, there is none. Even though thermoplastic films have been improved a great deal in sealability and are now held under much tighter control with respect to gauge and the other important machinability factors, you will still have to spend time and money converting your machines and training operators to use these materials.

Thermoplastics handle differently and seal differently than either paper or cellophane and they require much better heat control and heat-sealing mechanisms. We suggest that you start off by converting one wrapping machine. Good kits are now available from many materials suppliers and some equipment makers. We believe you will have better luck with one of the more complete conversion units than if you simply slip some Teflon over your present heaters. In addition to heating equipment, you may have to install special folders and change your present type of end label.

There are now three thermoplastic films for wrapping: Pliofilm, polyethylene and polypropylene. Many bakers feel that Pliofilm is easier to handle at first because it has a less critical sealing range. Medium-density polyethylene or the newer polypropylenes can be introduced after production men have become accustomed to the peculiarities of this type of film.

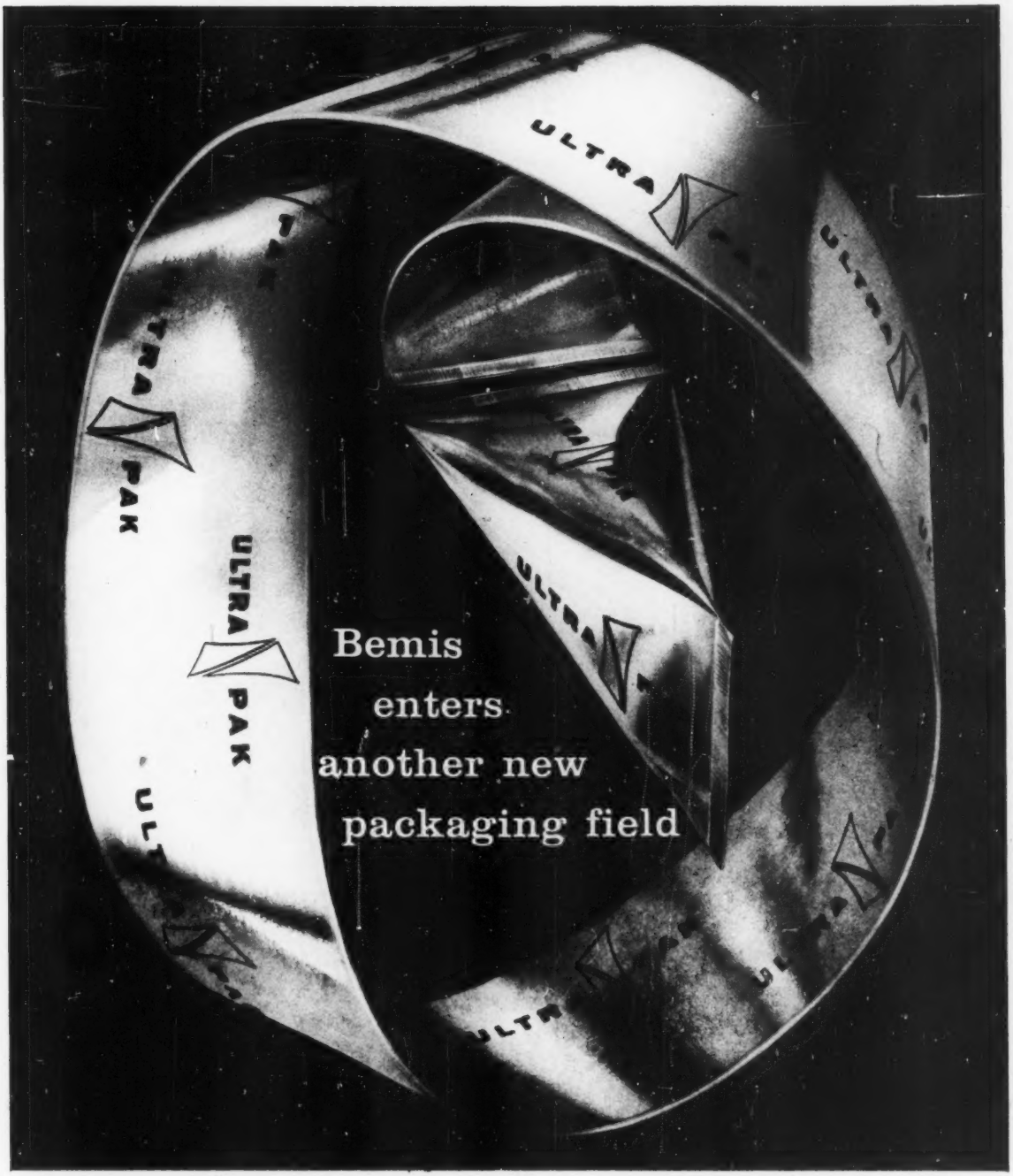
New industrial shippers

Q: *We manufacture electronic consoles that measure about 2 ft. in each dimension. We find that the cost of making wooden shipping crates for these products is far too expensive. Are there any modern techniques now used in other fields that would help us cut costs?*

A: There are several new packaging methods that might help you. But, at the outset, we should caution you to test these proposed containers carefully, since fragile products do not all have the same resistance to shock damage and these containers might be totally unsatisfactory without modifications.

Corrugated shippers are used more and more for industrial products that were formerly encased in wood. In your case, you would probably have to supplement this package with some form of padding, such as a foam plastic. One manufacturer of household appliances is now experimenting with molded polystyrene foam "caps" that fit over the eight corners of these machines and provide full product suspension inside the carton. Foam-in-place polyurethane is also being employed for typewriters. Utilized with internal corrugated partitions that form the "mold," this plastic sets rapidly and provides complete shock mounting in all directions. Pads or wraps of flexible sheet foam might also serve to prevent shipping damage to your corrugated-packed products.

Delicate items have also been imbedded in loose rubberized hair, shavings and popcorn. And now there is a new form of polystyrene foam that resembles spaghetti.



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Packaging what? Jellies, juices, concentrates, milk (with a *built-in straw*, if you wish), powders, granules, ice cream, salad dressing, cheese, shampoo, oils . . . a list a mile long, and growing.

Sizes? From ⅛ ounce (enough mustard for a small sandwich) to 8 ounces or more.

Materials? The *full range* of heat-sealing films, foils and laminations . . . *merchandising* materials.

Economy? As developed by PACKAGING FRONTIERS, Inc., Bemis' newest subsidiary, the tetrahedron becomes the lowest-cost hermetically sealed container ever created. Please write or phone for complete details.

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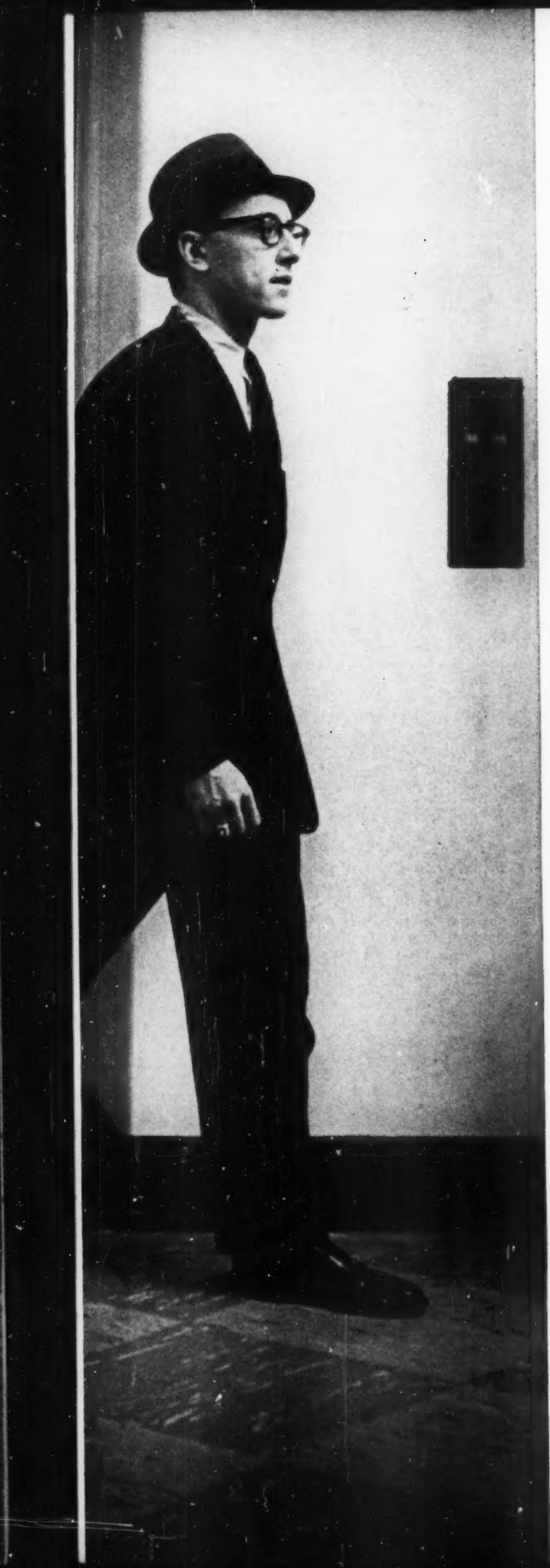


Your Anchor Man brings you all the benefits of SPECIALIZATION in glass packaging

In short, this means uniform, high quality glass containers, closures and sealing machines . . . specialized technical service and prompt deliveries . . . all resulting in efficient, economical production and dependable protection for your products. For more details contact your Anchor Man or write Anchor Hocking Glass Corporation, Lancaster, Ohio.

ANCHOR HOCKING

Specialists In Glass Sales-packages

Anchorglass Containers—crystal, amber, emerald green, georgia green—all standard styles, sizes and finishes.

Metal Closures—vacuum, twist, screw and lug types.

Molded Closures—stock and private design in a wide range of colors, featuring liner retaining ledge.

Sealing Machines—automatic and semi-automatic—vacuum and non-vacuum—speeds 30 to 1000 per minute.

plants & people

Food Machinery & Chemical Corp., San Jose, Calif., has changed its name to **FMC Corp.** Beginning July 1, physical change-over to the new name will proceed gradually throughout the year so the company's various operations can make the transition in an orderly fashion. The company reports that its widely diversified operations—in which only one fourth of its volume is now in food machinery—necessitated the change.

Walter G. Dixon, formerly dairy packaging sales mgr. for **Marathon, Div. American Can Co.,** Menasha, Wis., has been named marketing director of Marathon's food-packaging div. He will coordinate activities related to development of new business through planning for and introduction of new products. According to the company, he will also coordinate sales to customers served by more than one of the division's sales departments. **James R. McNevins,** Eastern sales mgr. for dairy packaging, succeeds Mr. Dixon.

Dixon *McNevins*

Diamond National Corp., New York, is now operating out of its new 24-story building at 733 Third Ave., New York. Diamond National occupies four floors in the new building, which is known as the Diamond National building.

In order to consolidate all paper-mill manufacturing and board-sales activities of **Continental Can Co.,** New York, into one operating division, the company has transferred operations of its boxboard plants in Haverhill, Mass., Middletown, O., Natick, Mass., and Tonawanda, N. Y., from the Folding Carton & Drum Div. to the newly named Paperboard & Kraft Div. This division was formerly known as the Containerboard & Kraft Div.

Charles M. McCarthy continues as gen. mgr. of paper and board mfg.; **William H. Cadoo** becomes gen. mgr. of boxboard manufacturing. New mgr. of boxboard sales is **George E. Tooker. O. M. Miller** has been appointed Folding Carton Div. mgr. of manufacturing.

National Distillers & Chemical Corp., New York, and **Bridgeport Brass Co.,** Bridgeport, Conn., have merged. Bridgeport Brass is now an operating div. of National Distillers. Bridgeport, a wartime pioneer in military aerosol developments, in 1945 introduced the first aerosol-can insecticide, the famous "Bug Bomb." Two years later, the company introduced the first low-pressure aerosol—a technological development that extended the aerosol principle from insecticides to the tremendous variety of food, toiletry, drug, household-chemical, paint and general-purpose aerosols that are available today. Bridgeport's achievements won recognition in MODERN PACKAGING's "Hall of Fame" series (May, 1953, p. 94).

Packaging Corp. of America, Chicago, continuing its growth in the field of expanded-polystyrene packaging, has opened a third plastics plant, in Vincennes, Ind. The new facility will be used to mass produce Mold-Pak, a custom-molded interior packaging.

The Kordite Co., div. National Distillers & Chemical Corp., Macedon, N. Y., will soon begin constructing a new plastics plant—its third in five years—at Tyler, Tex. Initial output of the plant will be devoted to polyethylene films for packaging applications. The company expects a 25% sales increase in 1961 and double its 1960 sales by 1963. This year Kordite will invest more than $3,000,000 or a new research and technical services center in Macedon.

Keil

William H. Keil has been promoted from Western regional mgr. to field sales mgr. of **Package Machinery Co.,** East Longmeadow, Mass. In his new position, Mr. Keil, who has been with the company since 1947, will supervise sales activity in the firm's seven branch sales offices throughout the U. S. and with its exclusive representatives in the Southwest, West Coast and Canada. His headquarters are at the company's main office.

The Mead Corp., Dayton, has opened newly expanded research facilities in Chillicothe, O. The $4,500,000 facility has as one of its major aims the formulation of new combinations of paper and plastics materials, to broaden the market for paper in packaging.

National Starch & Chemical Corp., New York, has purchased **Kleen-Stik Products, Inc.,** Chicago. Kleen-Stik is being operated as a sub. of National Starch, with present management continuing to direct all operations of the company. Kleen-Stik produces pressure-sensitive labeling papers, foils and films.

Herbert M. Meyers has joined **Lord Baltimore Press,** New York, as director of creative design. Mr. Meyers, who has won awards from the **Folding Paper Box Assn.,** the **Art Directors Clubs of New York,** the **National Lithographers Assn.** and other organizations, comes to Lord Baltimore after seven years as director of graphic design for **Mead Packaging, Inc.,** Atlanta.

Peter J. Fluge becomes communications mgr. for the Paper Products Div. of **Owens-Illinois Glass Co.,** Toledo. Mr. Fluge for the past four years had been v.p. of a Chicago advertising agency. As communications mgr., he will be responsible for the division's advertising, product publicity and merchandising activities, as well as internal communications programs. **Elmer P. Lotshaw** has joined O-I's Mktg. Development Dept. as mgr. of mktg. and economic research. Mr. Lotshaw formerly served as market economist for Pet Milk Co., St. Louis.

Fluge

Administration of the foreign activities of **Celanese Corp. of America,** New York, is being centralized in a subsidiary—Celanese International Corp. New officers appointed for the sub. include: **Fletcher Horn,** v.p. and asst. to the pres.; **Harrison C. Givens, Jr.,** v.p.; **Robert L. Mitchell,** v.p., and **Dr. Howard L. Pilat,** asst. v.p.

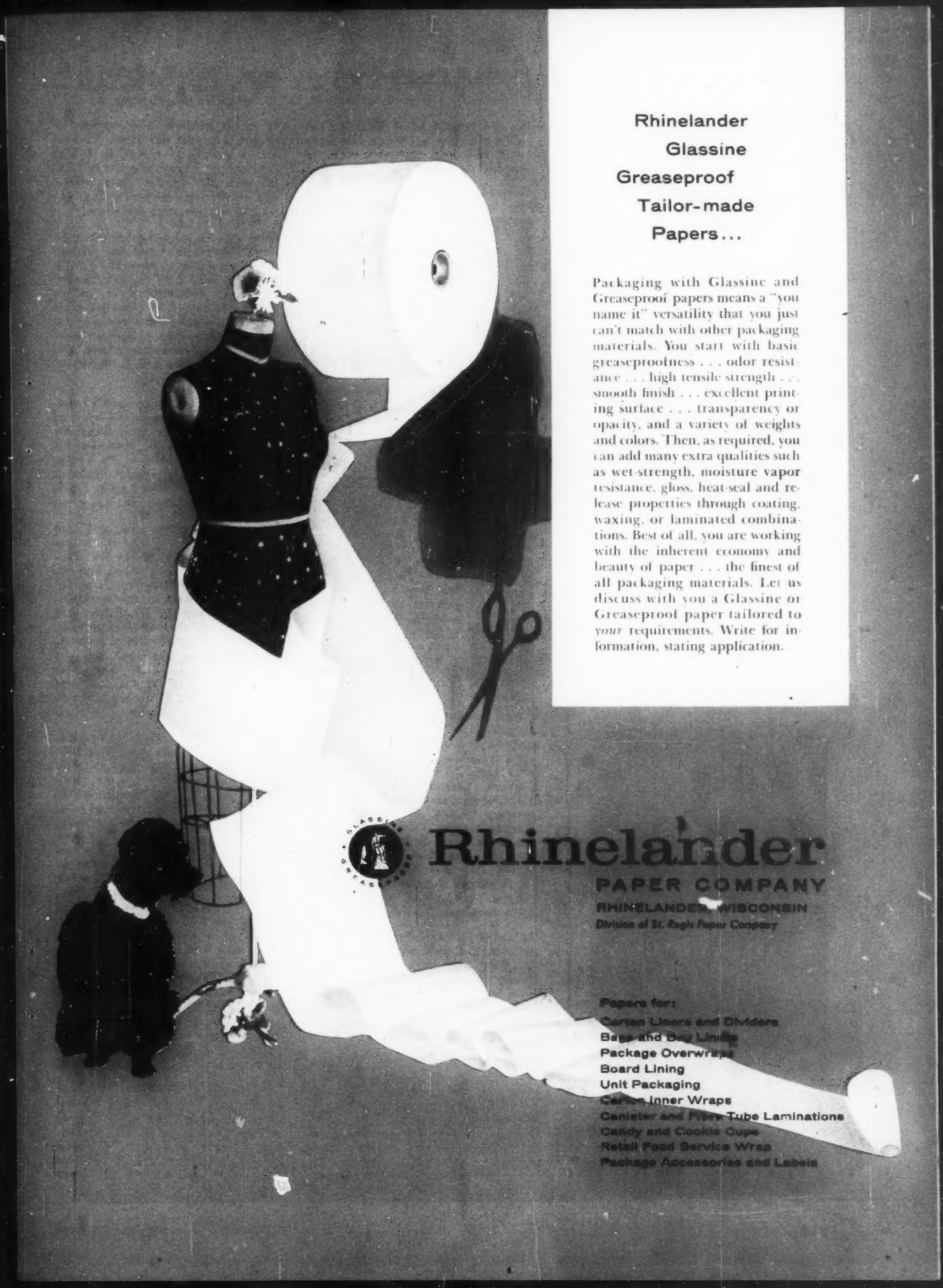
Celanese Corp. has also elected two new directors. They are: **John W. Brooks,** exec. v.p. for domestic operations, and **James R. Kennedy,** exec. v.p. for finance and administration.

Riegel Paper Corp., New York, has appointed **Dr. H. W. Verseput** as mgr. of folding carton development in its folding carton div. Prior to joining Riegel, Dr. Verseput was with **Continental Can Co.,** New York, where he did research and development work in the folding carton and related fields. He will make his headquarters at Riegel's Milford, N. J., laboratories.

The Dobeckmun Co., Cleveland, div. **The Dow Chemical Co.,** Midland, Mich., has promoted **William C. Mertz** to project engineer for film development. Mr. Mertz had been senior research chemist for three years and has been with Dobeckmun since 1953. He will be responsible for organization and direction in the development of Dobeckmun's polyolefin films. **William D. Sweeny** has retired as exec. v.p. of Dobeckmun. Mr. Sweeny joined the firm in 1932 as gen. mgr.

Mertz *Sweeny*

The board of directors of the **White Metal Mfg. Co.,** Hoboken, N. J., manufacturer of collapsible tubes and aluminum cans, has elected **Stanley M. Rumbough, Jr.** to pres., following the retirement of **Hubert Richter.** Mr. Rich-


Rhinelander
Glassine
Greaseproof
Tailor-made
Papers...
Packaging with Glassine and Greaseproof papers means a "you name it" versatility that you just can't match with other packaging materials. You start with basic greaseproofness . . . odor resistance . . . high tensile strength . . . smooth finish . . . excellent printing surface . . . transparency or opacity, and a variety of weights and colors. Then, as required, you can add many extra qualities such as wet-strength, moisture vapor resistance, gloss, heat-seal and release properties through coating, waxing, or laminated combinations. Best of all, you are working with the inherent economy and beauty of paper . . . the finest of all packaging materials. Let us discuss with you a Glassine or Greaseproof paper tailored to your requirements. Write for information, stating application.
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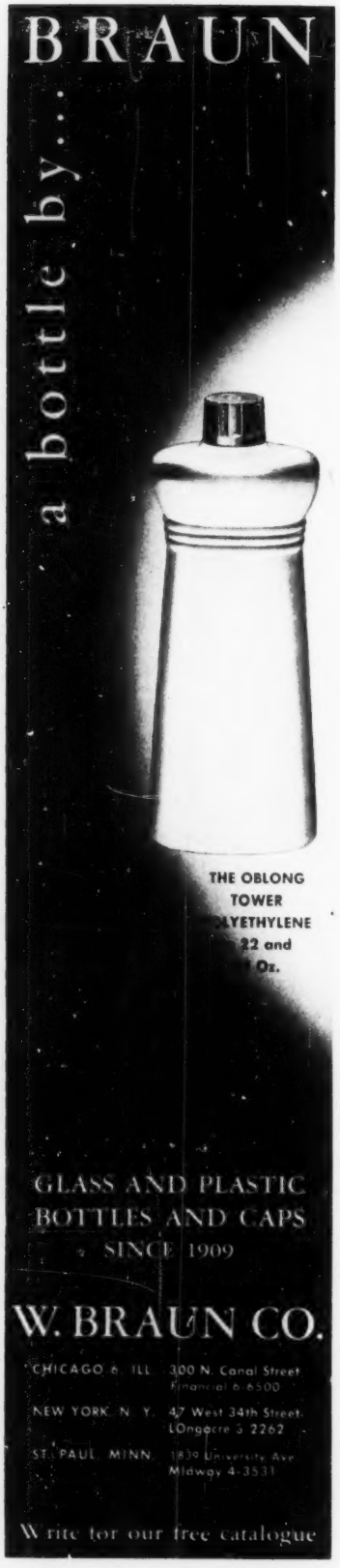
PAPER COMPANY
RHINELANDER, WISCONSIN
Division of St. Regis Paper Company
Papers for:
Carton Liners and Dividers
Bags and Bag Linings
Package Overwraps
Board Lining
Unit Packaging
Carton Inner Wraps
Canister and Fiber Tube Laminations
Candy and Cookie Cups
Retail Food Service Wrap
Package Accessories and Labels



Plants & People [*Cont'd*]

ter, who founded White Metal in 1913, will continue as a director. Mr. Rumbough has been associated with the company since 1945.

Robert G. Etter and **Frank X. Kreiling** have been named directors of **Nicolet Paper Corp., sub. Milprint, Inc.,** Milwaukee. Formerly v.p. in charge of sales, Mr. Etter joined Nicolet in 1954 as sales mgr. Prior to that he was with the **Gummed Products Co.,** Troy, O. Mr. Kreiling joined Nicolet in 1960 as v. p. He previously was with **Georgia-Pacific Paper Co.,** Toledo, Ore., and **Thilmany Pulp & Paper Co.,** Kaukauna, Wis.

Etter

Fred G. Robertson has been elected to the board of directors of **Mead Board Sales, Inc.,** Cincinnati, sub. **The Mead Corp.,** Dayton. He is v.p. and gen. sales mgr. of all domestic and foreign sales, with offices in Newark, N. J. **George R. Browner** has been elected v.p.

Roscoe M. Roberts has been named gen. sales mgr. for the Canco Div., **American Can Co.,** New York. Mr. Roberts, who had been asst. to the div. sales v.p., has been with American Can for 39 years. Canco sales v.p., **Robert C. Stolk,** announcing the appointment, said that a new organizational structure has been set up for the sales dept. It is built around the three principal departmental activities—selling, market and sales development, and sales operations analysis. Four new asst. gen. mgrs. for sales, to supervise U. S. field operations, were named. They are: **Douglas M. Johnson,** Eastern districts; **M. N. Nield,** Central districts; **W. V. Lyons,** Southern districts, and **F. J. Dowling,** Western districts. Two additional asst. gen. sales mgrs., both of whom will have offices in New York, were also named. They are: **Edmund Hoffman, Jr.,** in charge of market and sales development, and **David B. Ressler,** to direct sales operations analysis.

Roberts

As part of its Polyolefin Div. expansion program, **E. I. du Pont de Nemours & Co.,** Wilmington, has opened a new low-density polyethylene resin plant at Victoria, Tex. Another new unit, currently under construction, reportedly will bring Du Pont's high- and low-density polyethylene production to nearly 400-million pounds annually. Du Pont has also broadened its polyolefin expansion program to include market-development work on polypropylene resins. The company has limited amounts of polypropylene resin available for sale as part of the market evaluation program. Du Pont is producing some of the resin in a pilot plant in Wilmington, but most is being made to its specifications by **Hercules Powder Co.,** Wilmington. Reportedly, significant quantities will be used in research and development activities within the company.

Edgar B. Lehman, who has been in charge of overseas operations, has been named general sales mgr. of **S & S Corrugated Paper Machinery Co.,** Brooklyn. Mr. Lehman's new position will include supervision of both domestic and overseas sales operations.

Now that all sales agreements under which **Spencer Chemical Co.** products have been marketed overseas by U. S. export agencies have expired, **Spencer Chemical International**—a wholly owned sub. formed in 1958—has taken complete charge of the company's overseas operations. Pres. of Spencer International is **Albertus Slingerland,** with offices in Luxembourg. **R. L. McAllister** is plastic products mgr.

Three v.p.'s, a senior v.p. and an asst. v.p. have been elected by the board of directors of **Signode Steel Strapping Co.,** Chicago. **John H. McGregor** becomes senior v.p.; **Hobart P. Young,** v.p., mfg. div.; and **Joseph F. Beckman** and **Milton C. Carlson,** v.p.'s. **A. N. Perry** has been named asst. v.p., sales.

Raymond J. Baisley, pres., and **Clifford D. Keely,** v.p., founders of **General Corrugated Machinery Co.,** Palisades Park, N. J., have retired. Through a stock-purchase arrangement, a majority of the employees are now stockholders in the company. Mr. Baisley and Mr. Keely will continue as consultants. New officers elected are: **Joseph A. Miller** (formerly plant mgr.), pres. and plant mgr.; **Frank A. Kruglinski** (formerly sales mgr.), v.p. and sales mgr., and **Charles W. Trojan** (formerly secy.), secy. and treasurer.

Richard V. Scott, formerly v.p. and asst. director of sales for **Bemis Bro. Bag Co.,** St. Louis, has been named director of sales. He succeeds **H. V. Howes,** who has retired after 40 years with Bemis. Mr. Scott joined the firm in 1931 and had been asst. director of sales since 1959. Mr. Howes' career with Bemis began in 1920. Five years later, he was put in charge of the company's New Purpose Dept., which has since developed into the General Sales Dept. It now has a staff of 40 and encompasses sales development and sales management, with sub-divisions of advertising, market research, trade extension, pricing and product supervision.

Scott

Howes

Two executive positions have been filled by **Kaiser Aluminum & Chemical Sales, Inc.,** Oakland, Calif., at the firm's foil and container research and development laboratory in Chicago. **M. Wayne Marcoux** has been named mgr. of sales development and **William O. Cleary**

[*Continued on page 155*]

Memo

A WONDERFUL SOURCE FOR

- **BLISTER CARDS**
- **CONTRACT PACKAGING**

Over 100,000 square feet of space is devoted exclusively to turning out packages of perfection . . to better sell your product by providing it with the appearance that it needs!

TOO, WE AT AMERICAN CARDBOARD GUARANTEE TO MEET EVERY REASONABLE DEADLINE!

If you are interested in quality . . and competitive prices . . we know you will be interested in the story of American Cardboard! Your inquiry will receive our prompt attention.

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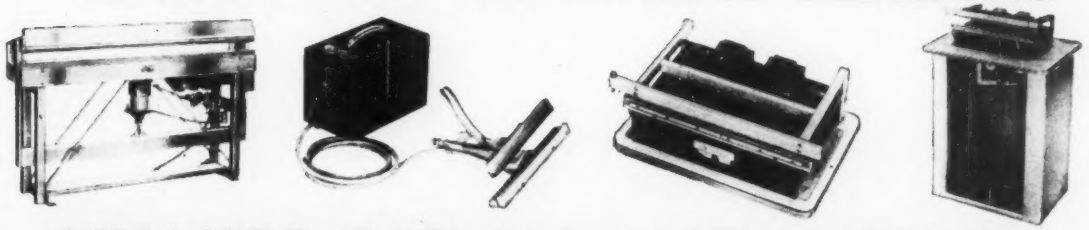
VERTROD

THERMAL IMPULSE HEAT SEALERS



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Vertrod is the oldest manufacturer of Thermal Impulse Heat Sealers. Our complete line of highly efficient sealers are designed to meet most sealing requirements. They deliver uniform positive seals and trim seals without continuous heat. No warm-up periods required. Seals all thermo-plastic materials and laminations such as: Polyethylene, Saran, Pliofilm, Vinyl, Polyvinyl Alcohol, Polytlex, Rigid Vinyl, Nylon, Mylar, Kel-F, Polyurethane Foam, Polystyrene and Acetate. Dependably built, they need a minimum of maintenance and have built in safety features. Seals can be made through wrinkles, gussets, liquids and powders. Hand, foot pedal and electromagnetic or pneumatic power operated models up to 96" long. Special sealers made to fit unusual sealing problems.

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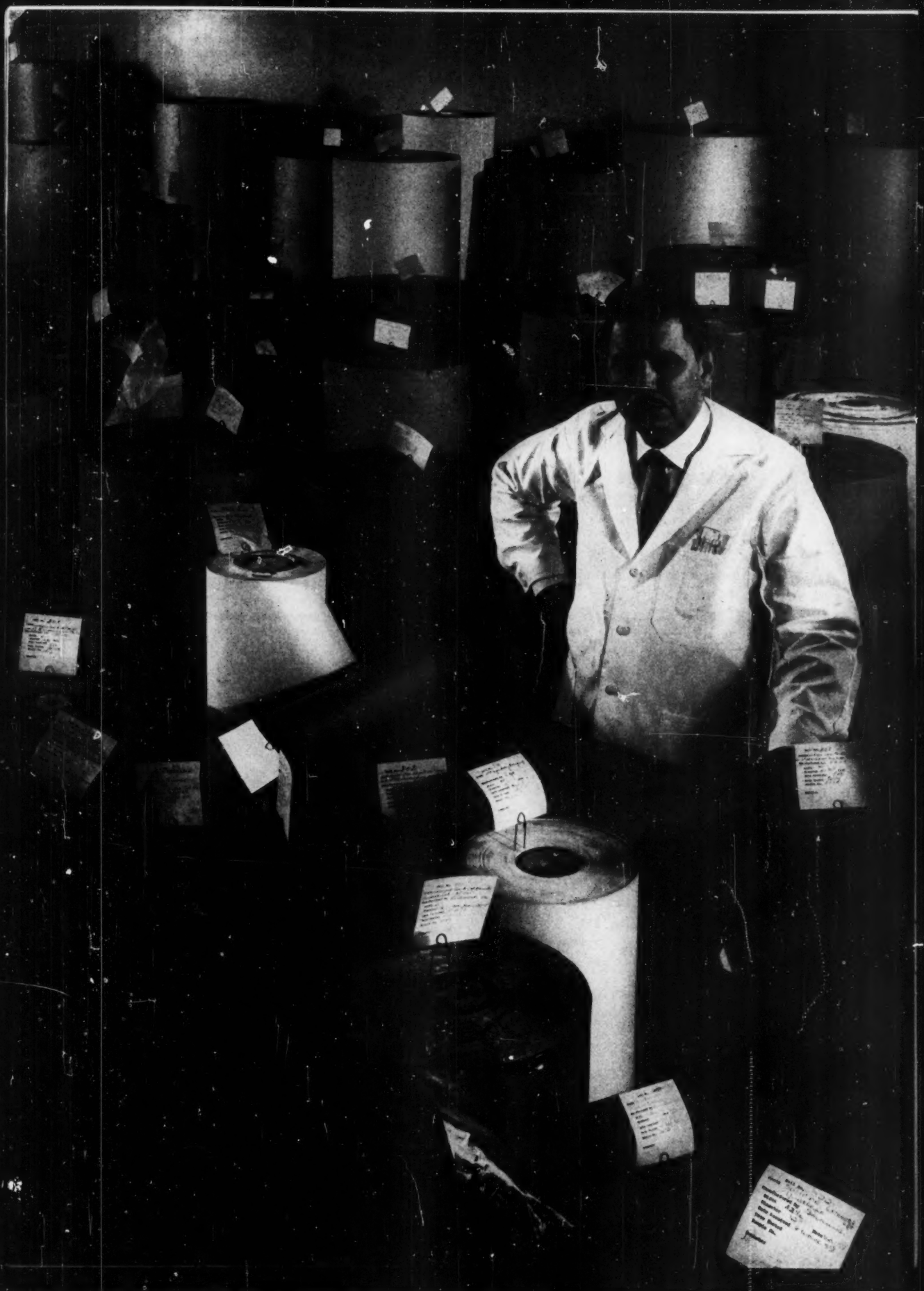


He knows all the right combinations

Using coatings and laminations, Union-Camp's Bob Harris has given corrugated boxes a host of amazing new properties.

OUR photograph shows Bob Harris standing in a forest of containerboard stock, paper and laminating materials. Here, he is comfortably at home.

He should be. Bob is a chemist, and a Project Supervisor at Union-Camp's Product Development Laboratory. Coatings and laminations are his specialty. Guesswork plays no part in his research.

"Today, thanks to coatings and laminations, there are few limitations on what you can package in corrugated," says Bob. "Using them singly or in combination, we can give corrugated boxes any number of protective properties. Water repellency, for example. Or snag and scuff resistance. Or resistance to acids and grease.

"We can coat the inside of a box so that it won't scratch the finish of an expensive hi-fi set. We can create moisture barriers for packaging soaps and other types of products.

"Everything we do is aimed at making the package more efficient by providing increased protection and reducing costly damage."

Recently, Bob and his group perfected a special *release* coating which is applied directly to the box. It prevents materials such as rubber or asphalt from sticking to the interior surface of corrugated boxes.

Bob Harris has also worked some minor miracles in improving the *printing* surface of Union-Camp containerboard. Using a special clay coating and resinous binder, an extremely smooth surface is provided that takes printing beautifully. The clean, sharp impressions that can now be achieved enhance the display value of the box and the sales appeal of its contents.

What lies ahead for corrugated combinations?

Bob and the rest of Union-Camp's development team are hard at work investigating new coatings that will result in even greater protection and economy for Union-Camp customers. This work is being carried on in a laboratory that can duplicate any shipping hazard a box is likely to meet in actual use. Its facilities include special *environmental rooms* that can simulate the heat, cold, or moisture conditions found anywhere on earth.

Find out what improvements Bob can make in *your* box. While you're about it, investigate Union-Camp's *complete* Packaging Evaluation Program available at no additional cost.

This service includes box design and development, specifications control, graphic design and merchandising counsel, box testing and in-plant surveys of your materials handling operation. An improvement in any one of these areas might produce greater efficiency and economy in your corrugated packaging operation.

A note on your letterhead will bring a prompt response. Why not write us today?

UNION-CAMP®

CORRUGATED BOXES

Union Bag-Camp Paper Corporation 233 Broadway N.Y. 7, N.Y.

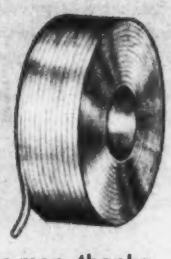
Plants:

*Dedham, Mass.; Allied Container Corp., Route 128, Allied Drive
Trenton, New Jersey; 1400 E. State St.
†Washington, Penna.; P. O. Box 285
†Cleveland, Ohio; 10200 Miles Ave.
†Sharonville, Ohio; P. O. Box 86
Chicago, Ill.; 4545 West Palmer
†Benton Harbor, Mich.; 11th St. & Britain Ave.
†Monroe, Mich.; 1109 East Elm Ave.
†Eaton Rapids, Mich.; P. O. Box 8
*Baltimore, Md.; Eastern Box Co.; Wagner's Point
Jamestown, N. C.; 3704 Point Pleasant Rd.
Spartanburg, S. C.; P. O. Box 1965
Savannah, Georgia; P. O. Box 570
Lakeland, Florida; P. O. Box 454

*Subsidiary Companies †River Raisin Division

LOWEST COST CLOSURES

come from forming your own WIDE-CROWNS FROM A COIL



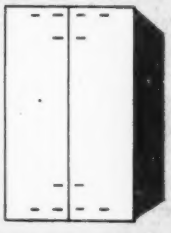
Stitching over 500 boxes per hour is no strain for one man, thanks to the combined talents of *high-speed* Acme Steel Stitching Machines and *stitch-saving* wide crown design. Feeding from a continuous coil of wire, the machine *cuts* the wire . . . *forms* it into 1¼" wide-crown staples . . . *drives* them quick as a flash.

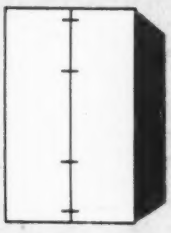
Lowering your wire costs is a double-sure cinch.

1. Since you form your own staples, you pocket the extra money you're now paying for expensive pre-formed staples.
2. Acme Steel's *exclusive* "Arcuate" wide crown stitch design affords the economy of lighter gauge wire. Yet, it assures the closure strength of heavier gauges.

These boxes typify the savings you can expect with wide crown design. Only half, or less, the number of 1¼" wide crowns do the job of conventional narrow crowns.

Have your local Acme Idea Man explain in full the savings potential of wide crown stitching in *your* operation, or write: Acme Steel Company, Dept. MFW-81, 135th St. and Perry Avenue, Chicago 27, Ill.





Approved for Uniform Freight Classification Rule 41 and by the National Container Committee.

ACME STEEL

IDEA LEADER IN STITCHING

Plants & People

[Continued from page 150]

has been named mgr. of packaging equipment. Mr. Marcoux will be responsible for developing and promoting the use of foil packaging in the bakery, frozen-food, meat, poultry, dairy and sea food industries. Mr. Cleary will coordinate the div.'s machine development and manufacturing program for closing equipment, container depositors and automatic lidding equipment.

Olin Mathieson Chemical Corp., New York, has made an executive realignment in its Packaging Div. In the film operations dept., **Candler W. Ellis** has been named to the post of mgr. of marketing services and **John B. Pritchett** has been appointed direct sales mgr.

Ellis

Pritchett

Robert D. Hillman, formerly district sales mgr. of the Far West, succeeds Mr. Ellis as New York-New England mgr., while **Dales E. Chaney** succeeds Mr. Hillman. C. T. McShane has been appointed Midwestern district sales mgr. E. L. Holloway, formerly direct sales mgr., film operations, becomes product mgr., cartons, for the Packaging Div.'s forest products operations group, West Monroe, La.

Van L. McNeel has been appointed director of packaging for Olin's International Div., New York.

West

Kenneth R. West has been elected pres. of **Andre Paper Box Co.**, San Leandro, Calif. Formerly exec. v.p. and gen. mgr. of the firm, he succeeds **Mrs. Jean Andre**, whose late husband founded the company. Mrs. Andre moves up to board chairman and **Mark E. Sanford** becomes exec. v.p. to succeed Mr. West. Mr. West is a director of the **Folding Paper Box Assn. of America.**

General Box Co., Des Plaines, Ill., has appointed **Oliver T. Sands** to the newly created post of national account exec. Mr. Sands will represent the company in the promotion of its line of shipping containers—wirebound boxes, corrugated cartons and foam-plastic packaging are included.

Fr. Hesser Maschinenfabrik, AG, Stuttgart, West Germany, manufacturer of automatic packaging machines, is celebrating its 100th anniversary. Founded as a workshop for making letter envelope machines in 1851, the company claims to have invented the first shell winding machine for packaging coffee substitutes, the first high-speed (60 per minute) packaging machine and the first continuous-motion soap-

[Continued on page 158]

Hamersley

OPAQUE POUCH PAPERS

Extra Strength and Fine Printability for FOIL, FILM and POLY COMBINATIONS

GLASSINES-GREASEPROOFS

Best Protection as Linings for Boards and for BAGS, BOXES, CANS, TUBES, WRAPS

HEAT SEAL WAXED GLASSINES

Moistureproof, Greaseproof Protection PRESERVES FLAVOR, AROMA, FRESHNESS

Hamersley Papers Work Best for You!

HAMERSLEY MFG. CO.

Papermakers since 1877

GARFIELD, NEW JERSEY

Q. What's NEW In DISPLAY PACKAGING?

A.

This "Miracle Sheer-Magic" glue package for Miracle Adhesives Corp., Bellmore, N. Y. uses a specially-designed DOMEPAK® by Plastic Artisans to assure greater protection against corner-breaking. Dome flanges are sealed directly to card surface.

PLASTIC ARTISANS DIVISION

THE WARNER BROTHERS COMPANY

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P.A. HAS THE DESIGN AND MASS PRODUCTION EXPERIENCE AND EQUIPMENT TO HELP YOU WITH YOUR DISPLAY PACKAGING FROM CONCEPT TO COUNTER. SEND FOR P. A.'S NEW "DISPLAY PACKAGING" GUIDE BOOKLET.

PA

Here's 0.1° Sensitivity at a Competitive Price!

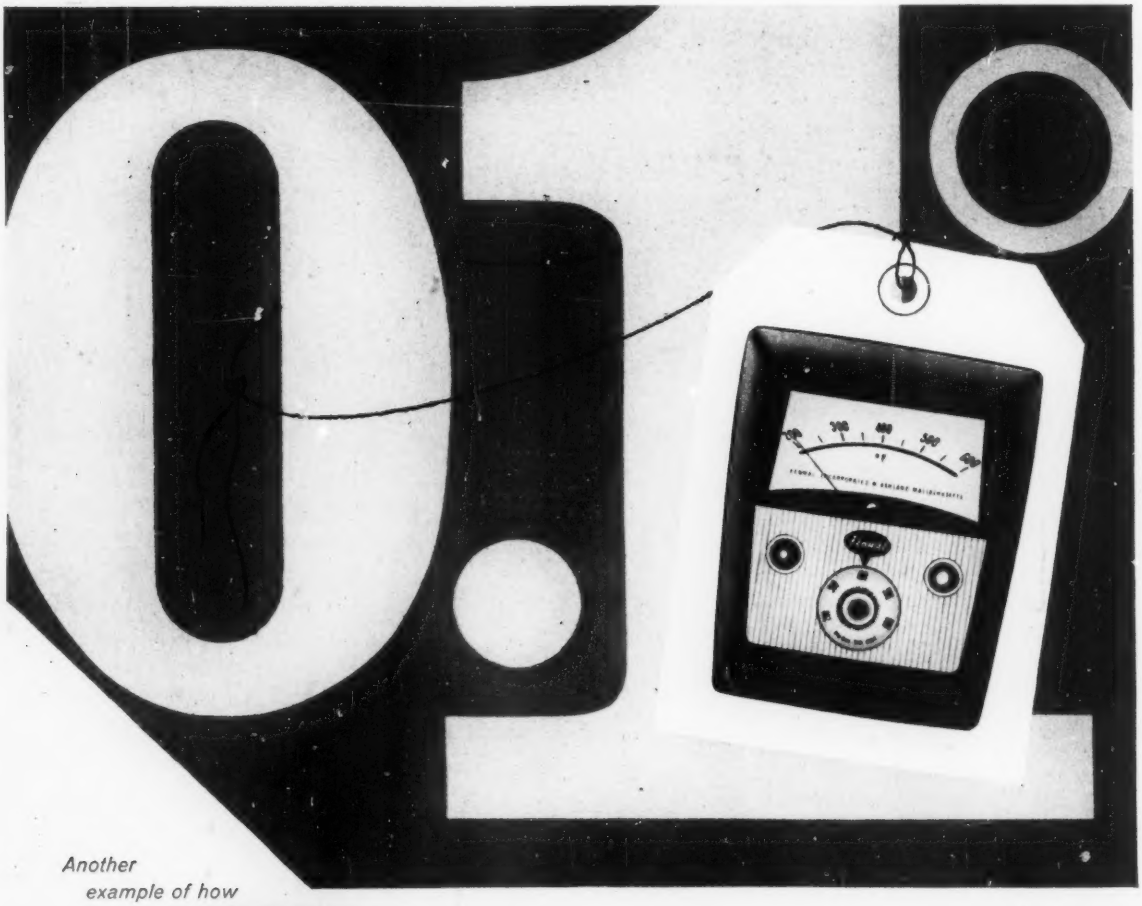
... Fenwal's New "561" Temperature Controller

The new "561" indicating controller responds to temperature changes of 0.1° or less! And is yours at a competitive price! These two features alone make it an instrument you should investigate . . . but there's more!

You can choose from five standard temperature ranges . . . within the span of −50 to 600°F. Furthermore, scales start and end within *your* ranges, permitting larger graduations, better legibility, easier readout. And control and indication are separate but simultaneous. *Should your indication fail the "561" will continue to control with complete accuracy.*

The Fenwal "561" indicating controller insures 100% reliable temperature control under the high speed, high heat conditions which govern many sealing operations. Its indication and control will not vary with fluctuations of input voltage nor changes in ambient temperature. It offers the option of either ON-OFF or proportioning control . . . has 10 AMP/120 VAC relay capacity. Smartly styled to complement modern industrial machines and interiors, *the "561" offers you all these extras at a competitive price.*

A Fenwal engineer will be glad to supply information on the "561", or any other temperature control in Fenwal's broad line. Write Fenwal Incorporated, 68 Pleasant Street, Ashland, Massachusetts.



Another example of how

Fenwal CONTROLS TEMPERATURE . . . PRECISELY

how successful marketers

USE ALUMINUM FOIL LABELS

to add more sales appeal!

Labels that reflect quality — boost sales volume — are printed on Anaconda Aluminum foil. One look at these containers tells why. On busy counters and shelves, bright-reflecting foil labels will make your product stand out. Have you considered how your product sales can benefit by the added in-store salesmanship of aluminum foil labeling? Foil adds a neat touch of conviction, lets your image shine more clearly and more forcefully than ever before. Whatever your product, with the help of

Anaconda Aluminum — plain or laminated foil or rigid foil containers — you can better protect and brighten your product — and your sales outlook. Our "Aluminum Foil Design" booklet includes helpful information on label design. For your free copy ask your Anaconda Aluminum representative or write Dept. MP-7, P. O. Box 1654, Louisville 1, Ky.

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CHerry 1-5851

GREENSBORO, North Carolina
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BRoadway 5-3311

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8000 Bonhomme Avenue
PArkview 1-1726

Folding paperboard packaging

GARDNER
A DIVISION OF DIAMOND NATIONAL CORPORATION MIDDLETOWN, OHIO

Plants & People

[*Continued from page 155*]

powder packaging machine (120 packages per minute). The company is represented in the U. S. by **Geveke & Co.**, Elmsford, N. Y.

Eugene J. Knapp has been appointed to the new position of product and applications engineer at **Corning Fibre Box Corp.**, Corning, N. Y. He will handle product design, product development and market appraisal of packaging materials.

Rhinelander Paper Co., Rhinelander, Wis., div. **St. Regis Paper Co.**, New York, and a producer of glassine and greaseproof papers, has made several sales-dept. appointments. **C. C. Johnson**, sales mgr., becomes v.p. for sales, succeeding **W. J. Davis**, who has been appointed v.p. and gen. mgr. **E. L. Mason**, formerly asst. sales mgr., becomes sales mgr. **P. J. Cooper**, formerly mgr.-merchant sales, is now asst. sales mgr. **R. E. O'Brien** succeeds Mr. Cooper as mgr., merchant sales.

Johnson *Mason*

Robert L. Tagen has been appointed public relations mgr. of **Emhart Mfg. Co.**, Hartford, Conn. Based at Emhart's exec. offices, Mr. Tagen will supervise internal, external and corporate public relations for the company, which manufactures glass-container-making equipment and a line of automatic packaging machinery.

Fred C. Caston has been appointed v.p.-national sales for **Foils Packaging Corp.**, Cincinnati. The company has developed a food-packaging machine which is said to fill and electronically seal containers twice as fast as can be accomplished by conventional means on available standard machinery.

Stone

Ira N. Stone has been appointed gen. mgr. of the Acme Div. of **Stone Container Corp.**, Chicago. He had been asst. to the corporate controller. Acme produces folding cartons, set-up boxes and other paperboard packaging products. **Walter H. McCallum** has joined Stone Container as sales mgr. of national accounts for the supplier company's paper box division.

Louis Cook has been named industrial sales mgr. for **Aerosol Corp. of the South**, Arlington, Tenn. Aerocos, as the company is known, is reported to be expanding in the industrial and institutional fields and now offers a line of aerosol-packed sanitary and maintenance chemicals.

Milton R. Stohl joins **Mystik Adhesive Products, Inc.**, Chicago, as v.p. and director of mktg. **Albert H. Zeigler** becomes v.p. of technical and mfg. operations for the company, a producer of adhesives used in packaging.

Spadoni

Henry F. Spadoni, Jr., has been appointed to the newly created position of packaging mgr. for **John H. Breck, Inc.**, Springfield, Mass., manufacturer of hair-care preparations. In his new post he will be in charge of all corporate packaging activities and will be headquartered at the firm's main plant. Mr. Spadoni joined Breck in 1958 and had been assigned to the technical service section of the company's research and development laboratories.

Edward J. Albert, board chairman, becomes also pres. of the **Thwing-Albert Instrument Co.**, Philadelphia. He succeeds the late **Ruth Anna Jago**, who died on May 28 after a brief illness. She had been with the firm for 43 years. Thwing-Albert makes physical testing instruments for the paper, plastics and textile industries.

At a press luncheon in New York June 29, **Frank H. Wheaton, Jr.**, pres., the **Wheaton Industries**, Millville, N. J., introduced a new book titled *The Wheaton Story*. The book tells about the development and growth of the nine diversified Wheaton companies and its 13 international affiliates. The firm was founded in 1888 as **T. C. Wheaton Co.**

Robinson

M. C. Robinson has been appointed glass-container-products mgr. for **Brockway Glass Co.**, Brockway, Pa. In charge of managing and promoting sales of glass containers throughout all Brockway sales divisions, Mr. Robinson will maintain close contact with the field sales offices in coordinating the company's sales program. Prior to joining Brockway, he was with **Hazel-Atlas Glass Co.**

Everett A. Wight, asst. mgr. of converter sales of the Film Dept., **E. I. du Pont de Nemours & Co.**, Wilmington, Del., has retired. He had been with Du Pont for 30 years.

Bernard W. Brooks has been elected pres. and board member of **Sheffield Plastics, Inc.**, Sheffield, Mass. Sheffield has also formed a Div. of Research & Development and has appointed **John B. Orr** as its director.

Two appointments have been made in the Plastics Div., **Spencer Chemical Co.**, Kansas City. **B. F. McAvoy** moves from the post of technical mgr. to become asst. to the v.p. He will be succeeded in his former post by **Dr. Edward T. Severs**. Mr. McAvoy will handle special projects for the Plastics Div. and will be in charge of nylon production at the company's Henderson,

GARDNER

"It's the people from **GARDNER** ... when they start their study of a packaging problem, they make sure they know all the angles. Their folks go right into the market place and find out what people like you and me want in packaging. That sort of on-the-spot market research helps them develop a package that's sure to sell . . . and that's the goal of their Persuasive Packaging service!"

Write, wire or phone your Gardner sales representative for Persuasive Packaging service.

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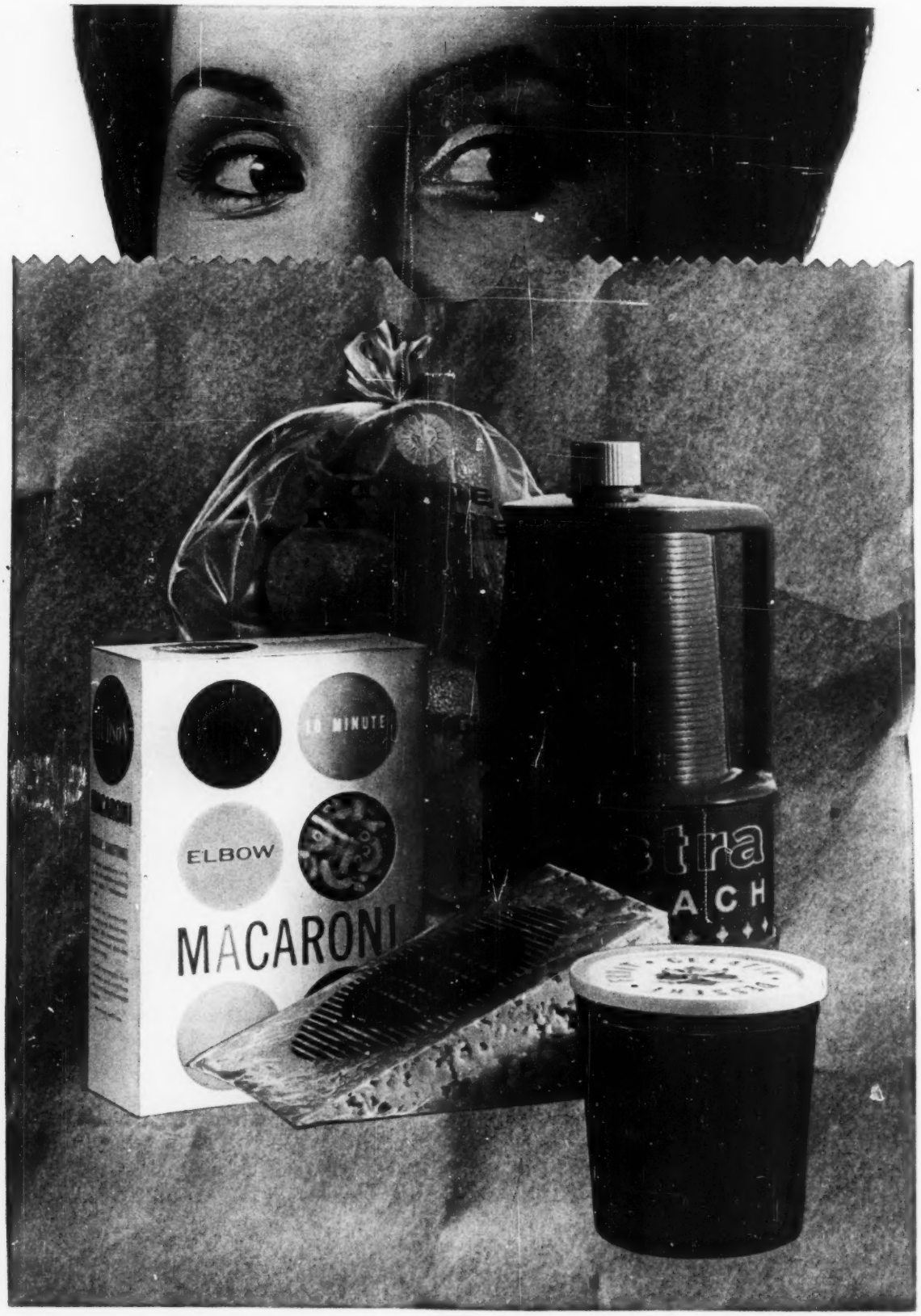
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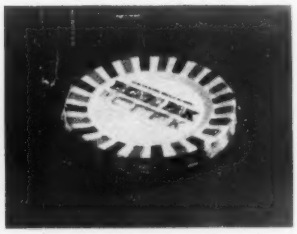
How to make a shopper see it ...your way!

In the free-for-all of today's self-service supermarket, your package must speak its own sales piece. Creative packaging ideas in Dow plastics combine showmanship on the shelf with protection for your product and convenience in its use. The range of materials is complete: Saran Wrap* gives unmatched protection for cheeses and meats . . . Polyfilm® lends appeal to produce and baked goods packaging . . . Trycite® low-cost transparent film is ideal for window box packages . . . Dow latex in coatings enhances print reproduction on boxboard . . . Styron® plastic food containers are so handsome they go right to the table . . . Dow high density polyethylene meets special design and functional requirements for blownware. Dow packaging materials, ideas, and experiences are on call for your product. For assistance, contact your nearest Dow sales office or write us in Midland.

*TRADEMARK

DOW PLASTICS

Dow Coatings materials in a range of properties provide eye-catching display and product protection for a variety of items from foods to cosmetics.



Polyfilm®, Dow polyethylene film, provides tough, low-cost protection in a clear showcase package for paper products and other supermarket wares.

THE DOW CHEMICAL COMPANY
Midland, Michigan

DOW

Plants & People

Ky., works. Dr. Severs comes to Spencer from AviSun Corp., Philadelphia.

Brockway Glass Co., Brockway, Pa., has moved its New York district office to 320 Park Ave., New York 22. At this office are headquartered the New York sales and service personnel of Brockway and its subsidiaries.

Promotions

Donald T. Snapp: from asst. advtg. & sales prom. mgr. to product mgr. for meat packaging, **Western-Waxide Div., Crown Zellerbach Corp.**, San Leandro.

Benjamin C. Renne: to Philadelphia district mgr., **Crown Cork & Seal Co.**, Philadelphia. He will be responsible for the sale of Crown's line of cans, closures and packaging equipment in Pennsylvania, southern New Jersey and northern Delaware.

John E. Farrell: to Cincinnati district sales mgr., Plastic Bottle & Tube Div., **Continental Can Co.**, New York.

Harry Sooy: to tech. director, **Robert Zeidman Associates**, New York, industrial and package design.

Peter K. Sheffield: to director, **The Sheffield Tube Corp.**, New London.

E. M. Bartlett, Jr.: from San Francisco region container sales mgr. to v.p.-mktg., Container Div., **Rheem Mfg. Co.**, New York. He will continue to maintain his office at Richmond, Calif.

Willard P. Greenwood: from plant mgr. to v.p. for mfg., **Forbes Lithograph Mfg. Co.**, Boston.

Appointments

Robert S. Breckenridge: from **KVP Sutherland Paper Co.** to asst. to v.p. of the packaging group, **Standard Packaging Corp.**, New York.

William E. Wilkinson: from asst. mktg. mgr., **Dairypak Butler, Inc.**, Olmstead, O., to area sales mgr. for vending cup, packaging and dairy products, **Conex Div., Illinois Tool Works**, Chicago.

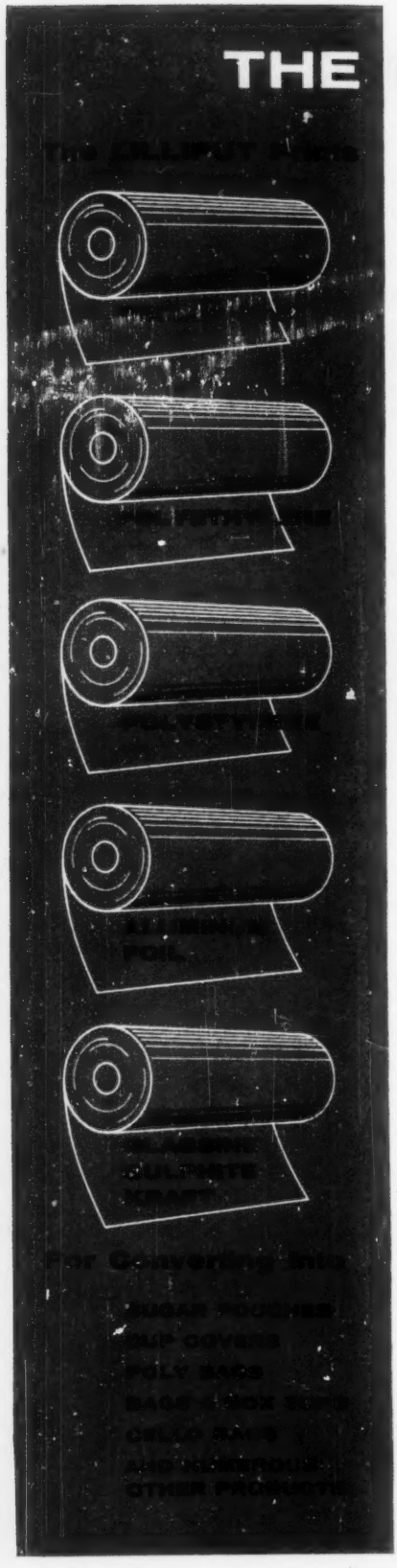
Frank Ostrofe: from **Safeway Stores, Inc.**, Jersey City, to principal, **Majors & Mattoch**, San Francisco. Majors & Mattoch is a lithography firm.

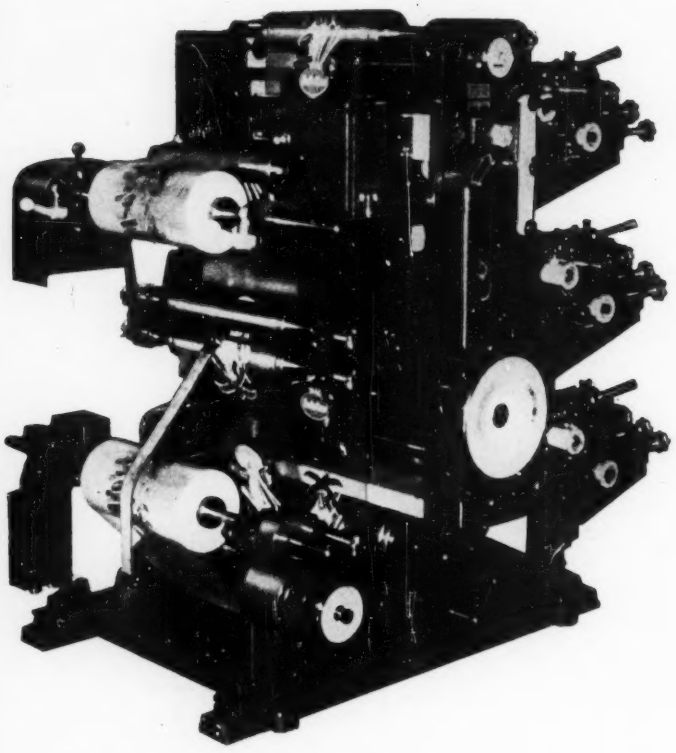
Obituaries

William R. Kiner, 53, mgr. of drug and cosmetic sales of the New York District Office, Packaging Materials Div., **Armstrong Cork Co.**, Lancaster, Pa., died May 19 at his home in Madison, N. J. He had been with Armstrong since 1926 and in his last position since 1955.

Augustus Rush, 76, pres. of the **Newark Paper Box Co.**, Newark, died May 20 in Short Hills, N. J. Founded in 1906, the company manufactures a line of set-up paper boxes.

THE HEINRICH LILLIPUT





A HIGHLY VERSATILE FLEXOGRAPHIC PRINTER FOR NARROW WIDTH MATERIALS

Narrow-width materials are in great demand for numberless packaging items. For outstanding multi-color printing on these narrow webs, the LILLIPUT provides proven, dependable operation, quality printing and good register.

This highly versatile press prints equally well on a large variety of materials and can be quickly changed from job to job. Above all, *it is attractively priced.*

Features of the LILLIPUT Endprinter

- Printing widths 9", 16" and 20"
- Printing repeats . . . 7⅛" to 20"
- One to three colors
- Unwind stand up to 24" max. roll diameter
- Friction rewind station
- ¼" CP or 10-pitch gears for plate cylinders
- Anilox engraved steel transfer rollers.
- *Plus* many optional features

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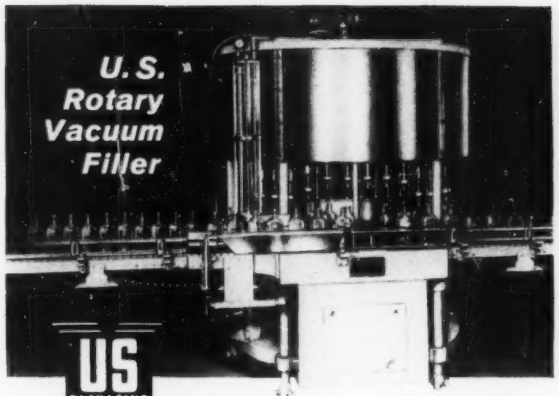


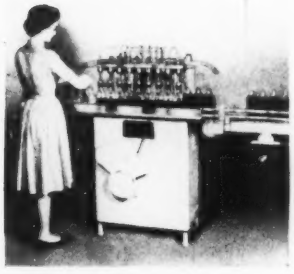
Basic Model NC-45 fills hot or cold liquids into containers up to 3¼" dia. at 450 p/m

Hundreds in Use

YET, NO TWO ALIKE!

The name, "U. S. Rotary Vacuum Filler" represents a wide line of models rather than an individual machine. These are basic models that vary in capacity from 16 to 45 filling tubes and are designed for implementation with standard adaptations to serve the individual requirements of each user. *No two machines are ever alike.*

Thus, U. S. filler engineering provides both: the efficiency of a custom-built machine and the practicability of standard machine parts. This together with exclusive features provides the lowest filling cost possible. For full details, please write for the "Rotary Filler Bulletin."



Most Versatile Multiple Filler

MODEL B-49 STRAIGHT-LINE VACUUM FILLER. For liquids and semi-liquids. Fills 4 to 9 containers simultaneously. Adjustable for all container heights up to 14". Stainless steel is standard; plastic on order. Discharge conveyor is optional. Write for "Bulletin B-49".

Continuous Filling

MODEL B-2 VACUUM FILLER. Fills 2 containers while 2 filled containers are being removed and 2 empties loaded. Handles containers up to 4¾" dia. up to 13" high. Stainless steel construction. Plastic available. Write for "Bulletin B-2".

For All Liquids • All Containers

Also for foamy products that do not permit agitation. Stainless steel filling tubes. Fill controlled automatically. Glass lined tank. No power required. Write for "Siphon Bulletin".

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Products Packaged in UNION CARBIDE VisQueen film keep fresh!

Products stay fresh longer—keep their fresh, attractive appearance when they're protected in modern VISQUEEN polyethylene film. An impenetrable moisture barrier, VISQUEEN film is proving its worth and reliability with an amazing variety of products. Try it and see.

PLASTIC FILMS **VISKING COMPANY**

Division of UNION CARBIDE *Corporation*

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***VISQUEEN film*—the original polyethylene film . . . finest for packaging.**

Du Pont cellophane makes news . . .

In one year, 19 new cellophanes for new packaging needs!

Still more cellophanes from Du Pont research—to meet new, ever-changing packaging needs. Today, packagers can choose from over 100 Du Pont cellophanes. Each one is sparkling-clear. Each one prints beautifully. Each one gives maximum efficiency. Yet there are important differences. Some are moistureproof. Others are not. Some lock air out. One actually "breathes". Another makes extra-tough bags. Many are ideal substrates.

The point is: Du Pont cellophane is many, many films. Different coatings give different properties, make each cellophane a different film. Right now there are over 100. And we have many more in the works.

Have you checked lately? There's a good chance you'll find a sp al Du Pont cellophane that will give you better, faster-selling packaging at lower cost. Call your Du Pont Representative or Authorized Converter. Du Pont Co., Film Dept., Wilmington 98, Del.

DU PONT

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DU PONT cellophane

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

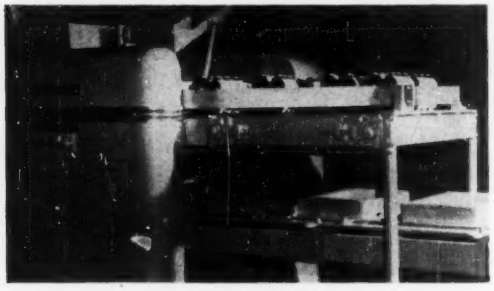
EQUIPMENT & MATERIALS

[*Continued from page 54*]

six packages simultaneously from a single roll of extrusion-coated cellophane. The single roll is slit on to three webs; each web is then folded to center around feed tubes, heat sealed and slit again in the center of the heat seal thus making tubular packages. After filling and final sealing, they are cut off in the conventional manner. Operational rate of the unit is said to be 306 pouches per minute. The machine is 78 in. high, 38 in. wide and 42 in. deep. It has electric-eye control and will cut packages to lengths up to 5 in. *Converters Service Co., 2344 E. 38 St., Los Angeles.*

High-speed case packer

Mead Packaging has introduced a Cluster-Pak case packer for use in canning or bottling plants. Designed to team with Mead's Cluster-Pak multi-packaging machine, the new case packer reportedly forms a system that handles the product from filling line to case at speeds of up to 600 cans or bottles per minute. No change-over is necessary when shifting from bottles to cans or vice-versa, says the firm. Since the packer is synchronized with the rest of the line, the supplier notes, the only attention required is periodic filling of the hopper. The operation is completely auto-



matic. A conveyor forms a double line of packages, and a three-stage cycle then groups, positions and cases them. Air action is said to prevent scuffed bottle labels and scarred cans, while a thick rubber cushion provides added protection against breakage. *Mead Corp., Mead Packaging Div., 950 W. Marietta St., N.W., Atlanta, Ga.*

Popped corn package filler

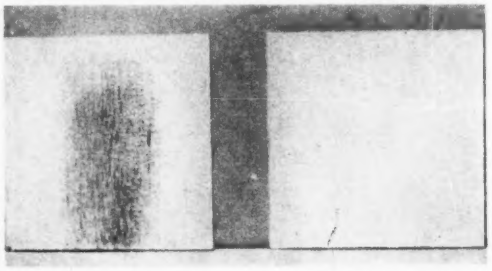
A new filling machine which measures and discharges large or small quantities of popped corn and similar products that are lightweight and free- or semi-free flowing has been introduced by Karstrom Co. The machine is reported to have special features for fast, quiet, accurate weighing and discharge to cartons or bags. The windowed hopper includes a rotating agitator which delivers the product to cups at an even rate to assure accurate weighings. Quick-change cups for varying products and amounts are also available, the supplier notes. Spouts can be tailored to individual needs. *Karstrom Co., 1818 W. 74 St., Chicago 36.*

Pharmaceutical strip-packaging facilitities

Nysco Laboratories, private-label manufacturer of pharmaceuticals and cosmetics, has made available strip-packaging facilities for tablets and capsules. Trade named Unitape, the packaging service is available for tablets ranging from 3/8 to 3/4 in. diameter, for hard gelatin capsules in various sizes and for large capsule-shaped tablets and soft gelatin capsules. Materials available for the method include cellophane and cellophane combinations, foil-polyethylene, acetate-rubber hydrochloride film and paper-polyethylene. The new facilities also include printing equipment, coding and trade name service. *Nysco Laboratories, Inc., 24-24 Vernon Blvd., Long Island City 6, N. Y.*

New corrugated anti-abrasion coating

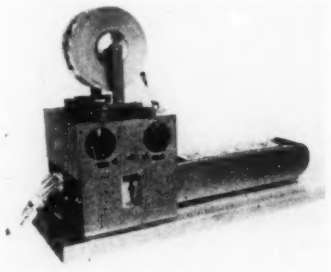
Inland Container has developed a new anti-abrasion coating for corrugated fibreboard that is said to prevent abrasion damage to finely finished products without leaving a



hard-to-remove deposit on the product. Designated Nomar, the coating remains stable and will not transfer from container to product even under extremely hot storage and shipping conditions, the supplier claims. It is said to be an entirely new product, not an improvement of the regular paraffin wax with additives which has been widely used for this purpose in the past. Reportedly, millions of square feet of fibreboard treated with the new coating have been tested in many diverse applications. The comparison photograph above shows two squares of enameled steel. The square on the left was rubbed five times with board coated with ordinary paraffin wax. The square on the right was rubbed 20 times with Nomar-treated board. This test was performed under standard atmospheric conditions using equal pressure on each square, according to the supplier. The new material is said to be a safe, non-corrosive compound, broadly compatible with product finishes and having no tendency to pick up foreign particles which could cause scratching of the product. Better over-all packages reportedly can be had by the use of the new treated board because the inner packing pieces can come in direct contact with the product and these pieces can then accurately and firmly position the product inside the protective shell of the outer carton. It also decreases packaging costs by eliminating the need for protective overwraps and by speeding packing lines, the supplier notes. *Inland Container Corp., 700 W. Morris St., Indianapolis 6.*

Film lidder for food containers

Packaging Industries has developed a new moderate-speed machine for the heat sealing of film lids to pre-filled formed containers. The pre-printed film, equipped with an easy-opening tear strip, can be dispensed either from a roll or in pre-cut form. The machine is said to be suitable for fresh foods, frozen foods, ice cream, nuts, candies and other items. Built-in adjustments are reported to produce a seal that is either boilable or peelable. According to the supplier, the machine can seal oriented polystyrene to oriented polystyrene, high-density polyethylene to high-density polyethylene, high-density polyethylene to polyethylene-coated polyester film or polyethylene-coated cellophane, polypropylene to polypropylene, vinyl to vinyl, acetate to acetate and butyrate to butyrate. Maximum size of blister cavity, with



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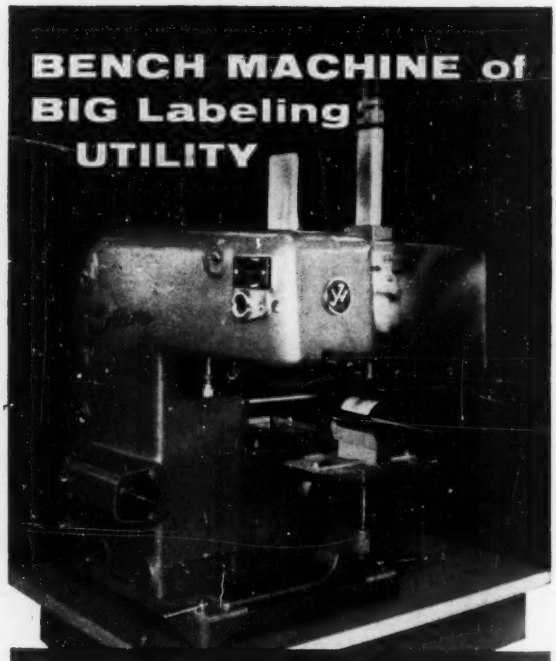

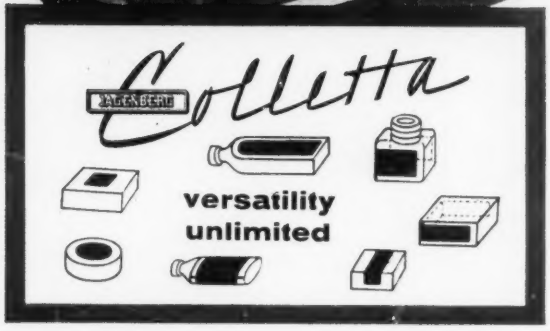

Colletta makes possible money saving mechanical labeling on short runs. Works on proven labeling system with full surface gluing and micro-glue adjustment. No glue smearing. Hair line register. Handles stiff glues and synthetic adhesives equally well.

Operation change-over and setting up is simple and fool proof. No special skill needed. Readily converted to fully automatic through use of easily fitted attachments. Changes from one size or shape of container to another take less than 5 minutes. Almost unlimited versatility, up to one gallon size. Send today for complete information. Use coupon.

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Please send us complete information on Colletta Labelers.

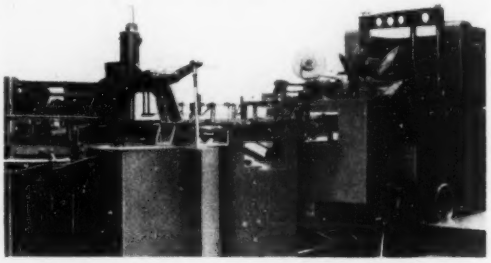
NAME _____ Position _____
COMPANY _____
ADDRESS _____

Equipment & Materials [*Continued*]

flange, is 10 by 8 by 4 in. deep and the machine will handle as many cavities as can be accommodated in a sealing area of this size. *Packaging Industries, Montclair, N. J.*

Lower-cost extension-edge box making

A new machinery development by FMC's Packaging Machinery Div. is reported to offer substantial savings in the production of extension-edge boxes. Called the Model FB flange mounter, it automatically attaches a flange base to the skeleton box or lid and eliminates hand labor heretofore said to be necessary with this type of set-up box. In



operation, a quad stayer delivers boxes or lids to the flange mounter which feeds the chipboard base into position while simultaneously strip gluing the bottom of the box—then positively registers and adheres one to the other. The unit has a magazine capacity of 1,500 flange pieces. Feeding is from the top of the stack by a suction system onto high-friction belts said to be designed to handle all types of commonly used board stock. Four mechanically operated positioning devices register the base piece squarely under a spotting plunger which instantly lowers the glued box and affixes the flange. Box sizes from 4 by 2 by ½ in. to 16 by 11½ by 2 in., with extension edges of $\frac{3}{16}$ or $\frac{7}{16}$ in., can be handled at reported speeds of 50 per minute. The unit can be used with any box-making line, the supplier notes. *FMC Corp., Packaging Machinery Div., 4942 Summerdale Ave., Philadelphia 24.*

Pearlescent colors for polypropylene

Enjay Chemical's polypropylene line now includes a wide range of pearlescent shades. The company says that the development of Escon polypropylene in pearlescent colors is the result of basic experimentation on the resin. Although the specific degree of pearlescence is dependent on the shape and size of the piece to be molded, the company notes, pearlescent polypropylene offers the molder a wider range of high-luster finishes than was previously possible. The new polypropylene is said to be especially suited for the fabrication of cosmetic closures and containers. Closures with reverse taper and no visible mold-parting lines have reportedly been successfully molded from the material. The supplier also suggests the material's use in compacts, razor cases, jewelry boxes and similar "decorative" containers. *Enjay Chemical Co., 15 W. 51 St., New York 19.*

Greater strength for metal cans

A new process in the development of metal cans, which is claimed to give the container additional strength for both pressure and vacuum resistance, has been announced by National Can. The new development provides the body of metal cans with a series of three clusters of circumferential beads. The beading process is effected before the can is formed, through pressure rolls applied to flat metal. This differs from the common process of beading a round can after it has been formed and soldered, the supplier notes. The company claims that the new process will enable it to use the new lighter-weight thin steels for a greater variety of cans. The Tri-Cluster Bead Can is said to be sturdier and more panel resistant than standard types of cans. It also is reported to offer better crush resistance. *National Can Corp., 3217 W. 47 Pl., Chicago 32.*

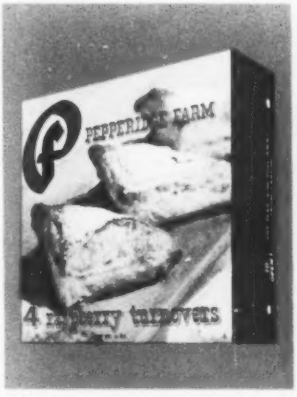
What Lord Baltimore's micro-screening means to a frozen food package

MICRO-SCREENING is the heart of Lord Baltimore's revolutionary Fidel-I-Tone® process. One that continually results in award-winning packages such as the Pepperidge Farm® frozen pastry line.

Fidel-I-Tone gives precision sharpness and unmatched color brilliance to packaging. Reproduction qualities never before possible with conventional lithography. Fidel-I-Tone is ideal for today's pictorial packages that *must* sell on sight.

Lord Baltimore was the *first* in the folding box field to successively offer 4-, 5- and 6-color offset presses. Now, all our plants offer these versatile presses as well as rotogravure and letterpress equipment. Novel carton construction and a wide range of finishes are also available.

We can construct a carton precisely designed for your product. Write: 425 Park Ave., New York 22; San Mateo, Calif. or 333 N. Michigan Ave., Chicago, Ill.



Lord Baltimore Press

PLANTS: BALTIMORE, MARYLAND • CLINTON, IOWA • SAN LEANDRO, CALIFORNIA

AFFILIATED PLANTS: MEXICO CITY, ENVASES AZTLAN • SAN JUAN: PUERTO RICO PACKAGING COMPANY LIMITED

"One Stop" SERVICE

Look to Oliver for complete service—from design through printing — in the production of your Roll-Type, Heat-Seal Labels. Oliver offers you experienced design service ... prompt, quality production ... technical knowledge ... and service that meets your deadline. Our specialists can recommend the right adhesive for the film you use. Oliver Roll-Type, Heat-Seal Labels are printed and used in continuous roll form. Easy to store — economical to use. Oliver designs and produces colorful, attention-getting labels for leading companies nationwide. May we serve you?

OLIVER MACHINERY COMPANY

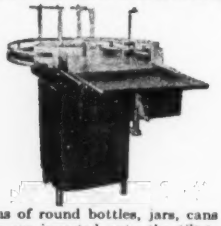
LABEL DIVISION

445 6th, N.W., Grand Rapids 4, Michigan

THE MOST COMPLETE LINE OF UNSCRAMBLERS!

Send for free catalog of The Complete Styl-O-Matic Line plus information on any of the products listed in this advertisement.

Styl-O-Matic
ROTARY UNSCRAMBLER

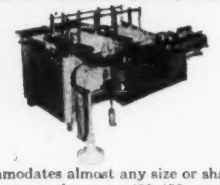


Cartons of round bottles, jars, cans or containers are inverted onto the tilt-top table. Contents are pushed onto revolving disk and *automatically* dispatched in single file to the conveyor. Also available with pallet feed for anti-biotic containers.

Styl-O-Matic
STRAIGHTLINE UNSCRAMBLER

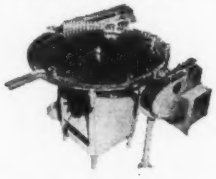
Cartons or cases of bottles, jars, cans or containers dumped onto table are instantly unscrambled and regimented into a single file to keep a continuous flow of units on your production line.

Styl-O-Matic **High Speed**
WALKIE-PUSHIE UNSCRAMBLER



Accommodates almost any size or shape container at speeds up to 400-450 per minute. Bottles, jars, cans or containers are unscrambled *without agitation*, and no scuffing or contact when discharging. High speed, very gentle handling is assured. Available also in twin units.

Styl-O-Matic
SURGE TABLE



An accumulating table that is placed at a point in the conveyor production line to receive and hold round bottles, jars, cans or containers when succeeding equipment is momentarily shutdown.

ISLAND EQUIPMENT CORP. Dept. MP8 • P.O. Box 380276 • Miami 38, Florida

DAYLIGHT FLUORESCENT PRINTING INK IS THE CENTER OF ATTRACTION IN PACKAGING CIRCLES

DAY-GLO

Switzer Brothers, Inc.
4732 St. Clair Avenue Cleveland 3, Ohio

manufacturers of DAY-GLO printing inks for gravure, letterpress, lithography, silk screen. Crocker Day Glo Coated Papers also available

Sales Offices: New York, Chicago, Los Angeles, Canada: A. R. Monteith, Limited, Toronto

Oxydol is a registered trademark of The Procter & Gamble Company.

THIS IS DU PONT "ELVAX"...

"ELVAX" vinyl resins are translucent, free-flowing pellets that blend readily with wax to form strong, flexible coatings for a wide variety of packaging materials. "Elvax" blends are easy to apply by hot-roll, curtain or solvent-coating techniques.

a new vinyl resin that gives wax greater versatility in packaging

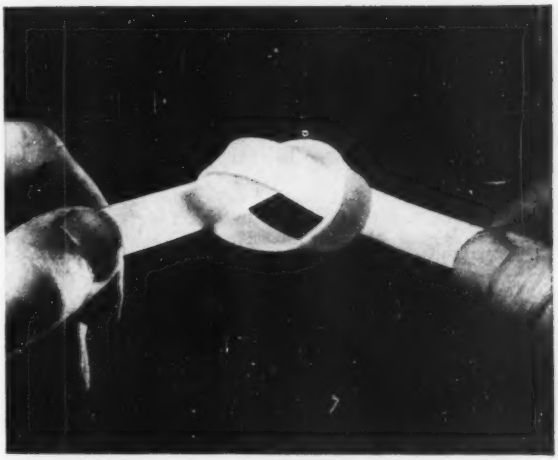
"Elvax" is a new, high-molecular-weight vinyl resin that makes possible low-cost wax coatings of superior adhesion, flexibility and toughness with excellent water-barrier properties.

With "Elvax" you can, for the first time, control the water-vapor transmission rate (WVTR) of wax coatings simply by varying the ratio of "Elvax" to wax. As little as 5% of "Elvax" added to wax reduces the creased WVTR of unmodified wax coatings by 50% without impairing the flat WVTR. In addition, resistance to grease penetration is improved significantly. When 40% "Elvax" is blended with wax, flexible 1-mil coatings with flat and creased WVTRs of 0.2-0.4 gms./100 in.^{2} 24 hours are obtainable.

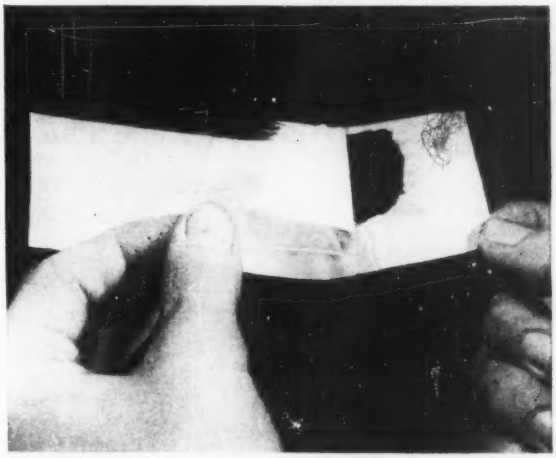
You can obtain tough, flexible adhesive bonds using "Elvax" alone or combining it with waxes, resins, rosins and rosin derivatives. "Elvax" exhibits strong adhesion because of the chemically active polar groups in its molecules. Flexibility and toughness (see upper right) result from its rubber-like, noncrystalline structure and high molecular weight. Hot-melt, solvent and pressure-sensitive adhesives based on "Elvax" adhere tightly to all films used in packaging today (see right).

Since "Elvax" will be used in food packaging applications, Du Pont is currently completing a nineteen-month study which will be used to petition the FDA for permission to use "Elvax" where contact with food is concerned.

You can order "Elvax" now in commercial or evaluation quantities. Our new booklet on "Elvax" provides information on properties and application methods . . . suggests possible uses. Write: Du Pont, Electrochemicals Dept., Vinyl Products Division, Room N-2533, Wilmington 98, Delaware.



FLEXIBILITY is demonstrated by tying a strip of paraffin wax, blended with 40% "Elvax", into a knot. When "Elvax" is added, the strip becomes plastic...will take 50% elongation before it breaks . . . is flexible at –20°F.



ADHESIVE STRENGTH of wax extended with 40% "Elvax" is shown by the fiber-tearing bond obtained when paper coated with "Elvax"/wax is heat-sealed to polyethylene. Coatings based on "Elvax" heat-seal to all films used in packaging today.

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

"ELVAX"
VINYL RESINS

FOR YOUR INFORMATION

The **Packaging Institute** has issued a third edition of its *Glossary of Packaging Terms*, which is now a part of Federal Standard 75. The new edition is a joint project of various agencies of the government—including the Army, Navy and Air Force—working in conjunction with a large number of participants from private industry through the Packaging Institute. The cost of the 172-page volume, which is loose-leaf bound to conform with Government standards, is $3.50. However, until Sept. 1 members of PI may obtain it for $2.50. Orders should be be sent to the Packaging Institute, 342 Madison Ave., New York 17.

James G. Ferguson was elected pres. of the **Glass Container Mfrs. Institute** at a recent meeting of GCMI's board of trustees in White Sulphur Springs, W. Va. He is v.p. of Laurens Glass Works, Inc. **Roger H. Hetzel** of Armstrong Cork Co. was elected first v.p. and **William M. Cameron** of Hazel-Atlas Glass Div. of Continental Can Co. was elected second v.p. S. B. **DeMerell**, Anchor Hocking Glass Corp., **R. H. Mulford**, Owens-Illinois Glass Co., and **Dr. A. W. Wishart**, Knox Glass, Inc., were named to fill vacancies in GCMI's board of trustees.

Ferguson

In order to define its basic function more accurately, the **American Rack Merchandisers Institute** has changed its name to **American Research Merchandising Institute.** ARMI has for many years maintained nationwide research machinery to help supermarket operators obtain a higher return per square foot of sales space. The group has more than 500 non-food manufacturer members serving some 22,000 supermarkets in this country.

Edward E. Loebe, The Regensteiner Corp., has been elected pres. of the **Lithographic & Printers National Assn.** to succeed **William E. Zabel**, Zabel Bros., who becomes board chairman. **Raymond P. Kane**, U. S. Printing & Lithograph Div. of Diamond National Corp., is new v.p. and **Frederick T. Marston**, Kaumagraph Co., is treas.

A recent survey conducted in four metropolitan areas by **The Psychological Corp.**, New York, for **Continental Can Co.** indicates that young parents with large families are the best prospects for soft drinks in cans. Of adults who had tried canned soft drinks, according to the survey, more than half were 39 or younger and almost three-quarters lived in households containing three or more persons. Sixty-nine per cent had one or more children at home. The survey also says that the failure of many people to try canned soft drinks is due more to a lack of awareness of their availability rather than dislike of the idea. The most often cited advantage of cans was easy disposability. Other advantages mentioned were quick chilling, good chill retention, unbreakability and ease of storage and handling. Better flavor and good appearance were the advantages most often cited for bottles. The complete survey, titled "A Report on Consumer Attitudes Toward Carbonated Beverages in Cans," is available without cost from Continental Can, 100 E. 42 St., New York 17.

The Eastern Chapter of the **Society of Packaging & Handling Engineers** will offer a basic course in package cushioning next fall. To be held on alternate Thursdays beginning Sept. 14 in New York City, the course will consist of six lectures. For further details contact Mr. A. D. Brown, Herculite Protective Fabrics Inc., 661 Fourth St., Newark 7.

The **American Society for Testing Materials** has made available a 62-page list of publications describing the symposiums, manuals, special publications, indexes, compilations of standards, charts, reference photographs and reports published by the society through the years. More than 300 items are fully described, 40 of which are new and not previously listed. The items are arranged alphabetically by title and subject. The list is available without charge from ASTM, 1916 Race St., Philadelphia 3.

Events

Aug. 14-18—**American Management Assn.**, workshop seminar, Defense Packaging, Colgate University, Hamilton, N. Y.

Aug. 14-18—**American Management Assn.**, workshop seminar, Packaging Management in Consumers Goods Companies, Colgate University, Hamilton, N. Y.

Aug. 20-23—**National Assn. for the Specialty Food Trade, Inc.**, seventh annual fancy food and confectionary show, Hotel Astor, New York.

Sept. 5-15—**Institute of Packaging**, National Packaging Exhibition, Olympia, London, England.

Sept. 6-8—**TAPPI**, 11th annual corrugated containers conference, St. Francis Hotel, San Francisco.

Sept. 11-13—**American Management Assn.**, Workshop seminar, Packaging Costs and Controls, Hotel Astor, New York.

Sept. 22-Oct. 1—**International Plastics Fair**, Copenhagen, Denmark.

Sept. 25-27—**National Flexible Packaging Assn.**, fall meeting, Waldorf-Astoria Hotel, New York.

Sept. 26-27—**Research & Development Associates Food & Container Institute**, military-industry conference, LaSalle Hotel, Chicago.

The Jackmeyer Corp. has published a 23-page booklet titled "Blister Packaging Facts." The booklet, which is illustrated with a number of photographs, drawings and diagrams, is designed to help users and potential users of blister packs, skin packs, slide and contour packs, and other thermoformed plastic packages. It describes the forming of each of the types of thermoforms and discusses card selection, coatings, adhesives, inks, printing process selection and assembly methods. The booklet includes a glossary of thermoforming terms. It is available without charge from the Jackmeyer Corp., 253 West 26 St., New York 1.

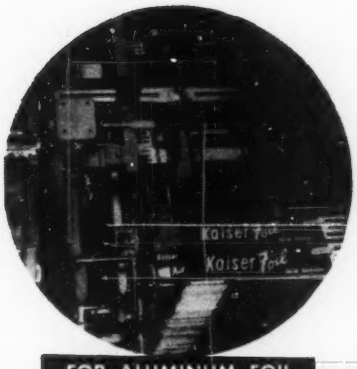
The **Ronald Press Co.**, New York, has published a third edition of *Advertising* by **Albert Wesley Frey.** The 600-page textbook includes a list of supplementary readings and a name and subject index. Designed for use in undergraduate and graduate advertising courses, the text is divided into three broad areas—the advertising structure, factors in advertising management and social economic effects of advertising. The text is illustrated and an instructor's manual is available. The price is $7.50 per copy.

The estimated aggregate volume of sales for the fibre can and tube industry were $133.5 million in 1960, according to figures released by the **National Fibre Can & Tube Assn.** This represents a $13 million increase from 1959's estimated sales. The association expects another record year in 1961.

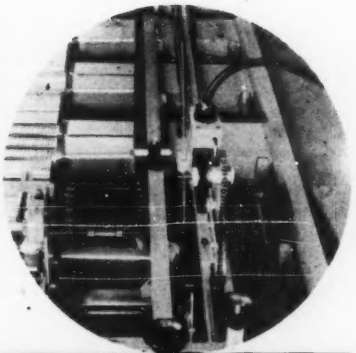
Theodore W. Schmitt, Peerless Tube Co., has been elected pres. of the **Collapsible Tube Mfrs. Council.** He succeeds **Frederic Remington**, also of Peerless Tube, who founded and became pres. of the association in 1935. Among Mr. Schmitt's efforts for the industry was the pioneering of polyethylene for tube caps after World War II. Mr. Remington was the inventor of the high-speed internal waxing machine for metal tubes which made possible the use of lead tubes when tin sources were cut off during World War II.

Schmitt

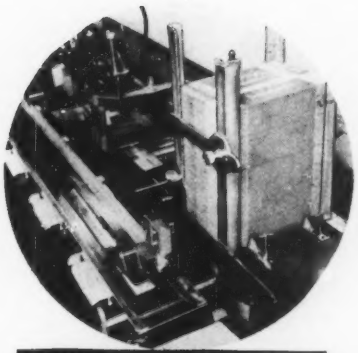
W. Wallace Muir, Grand Rapids Label Co., has been elected pres. of the **Roll Label Mfrs. Assn.** He succeeds **T. J.**



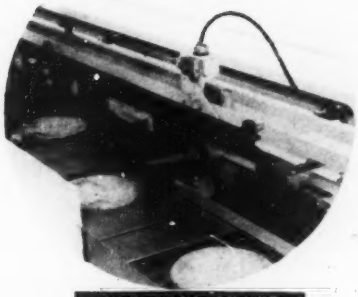
FOR ALUMINUM FOIL



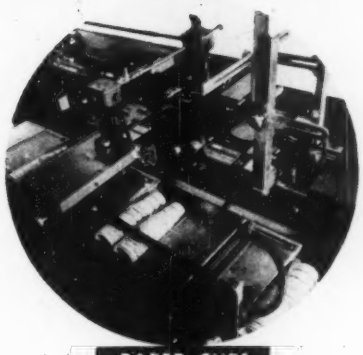
FOR COOKIES AND CRACKERS



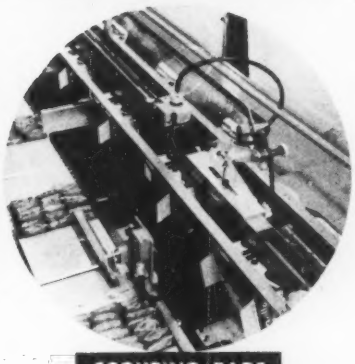
FOR SANITARY NAPKINS



PIES AND CAKES



PAPER CUPS



SCOURING PADS

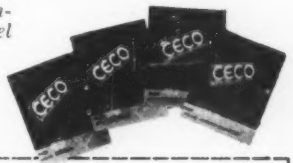
the perfect combination of speed and flexibility

CECO MODEL 50 AUTOMATIC

Here is the machine specifically designed for the problem package – rolls of aluminum foil, sanitary napkins, paper products, cookies – any product that can take advantage of CECO's bucket feed method. Automatic? Right, fully automatic. This is a constant motion cartoner in which the carton is opened, product inserted, and carton closed – automatically. The opportunities to save on labor costs are exceptional. Flexible? Right again! Changeover from a 7" roll of aluminum foil to an 18" roll takes less than 30 minutes. And, like all CECO cartoners, the Model 50 can be had to handle either glue or tuck style cartons and can be accessorized to meet individual requirements.

A MACHINE FOR EVERY REQUIREMENT

Other CECO machines include the Model 3901 glue sealing machine, the Model 40 semi-automatic cartoning machine, and the Model 45 fully automatic.



CONTAINER EQUIPMENT CORPORATION
BLOOMFIELD, NEW JERSEY

CONTAINER EQUIPMENT CORPORATION
78 LOCUST AVENUE, BLOOMFIELD, NEW JERSEY

Please send literature checked off:

☐ Model 3901 ☐ Model 45 ☐ Model 40 ☐ Model 50

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COMPANY_____

ADDRESS_____

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When your success is at their fingertips

RISDON VALVE QUALITY IS VITAL INSURANCE

Risdon aerosol valve quality, performance proven on many millions of packages, gives full assurance of customer pleasing results over the entire package life.

An inferior valve can be your most expensive bargain. Insure success—specify Risdon.

Write For Free Booklets On RISDON Valves

For Pressurized Products, Pump Action Units, Metered Dose Containers

DISPENSING Conventional Aerosol, 3-Phase Products, Alcohol Base Products, Water Base Products, Foam Products, Powder Sprays, Metered Sprays, Ultra Low Pressure Aerosol Products, Products Containing Propellents Immiscible with petroleum, etc.

RISDON THE RISDON MANUFACTUFING CO.

Valve Division Naugatuck, Conn.

F.Y.I. [continued]

Norman, Package Products Co. Others elected include: v. p., **Arthur D. Berliss, Jr.**, Allen Hollander Co.; treas., **J. A. Larson**, A. M. Steigerwald Co., and exec. director and gen. counsel: **John A. Bresnahan. Duane Hillmer**, Paramount Paper Products Co., and **M. J. Mateo**, The Fairbairn Co., have been elected directors.

Jackson

Dr. John M. Jackson of the Research Div. of American Can Co. has been named pres.-elect of the **Institute of Food Technologists.** After serving one year as pres.-elect, Dr. Jackson will become pres. of the institute at the 1962 annual meeting in Miami Beach, Fla., on June 13. He has previously served as secy., chairman and councilor of the Chicago section of the institute.

Rosaline M. Iammarino has been promoted to asst. treas. of the **National Flexible Packaging Assn.**

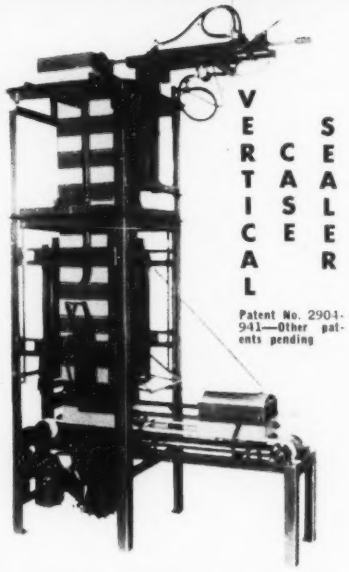
Visual Research International (VRI), an international organization for visual research and attitude study on consumers, has been formed in Lucerne, Switzerland. Countries represented at the organizational meeting were Italy, France, Switzerland, West Germany and the United States. Organizations in Belgium, The Netherlands, Great Britain, Spain and Japan are reported to have applied for admission. **Dr. Edmund W. Faison**, pres. of Visual Research, New York and Chicago, was elected pres. **Pierre J. Louis**, Institute of Visual Research and Attitude Study, Paris, was elected gen. mgr., and **Werner Wyss**, Visual Research-Switzerland, was elected gen. secy. Further information about the organization can be obtained from its headquarters at Pilatusstrasse 41, Lucerne.

Among the executives who attended the recent **National Defense Executive Reserve Conference**, sponsored by the **Business & Defense Services Administration** of the **U. S. Dept. of Commerce**, was **L. H. Zahn**. Mr. Zahn is director of purchasing and package development at Ciba Pharmaceutical Products Inc. and pres. of the **Packaging Institute.**

Martin S. Peterson, chief, Technical Services Office, **Quartermaster Food & Container Institute for the Armed Forces** and a contributor to the Technical & Engineering section of MODERN PACKAGING, has written a book titled *Scientific Thinking and Writing.* Published by **Reinhold Publishing Corp.**, New York, the 240-page book emphasizes the integration of logical and scientific methods with the actual organization of scientific writing. Mr. Peterson is a former editor of *Food Technology* and *Food Research.* Copies of his new book, at $6.95 each, are available from the publisher.

The Midnight Vertical

SEALS CASES ON THE WAY UP

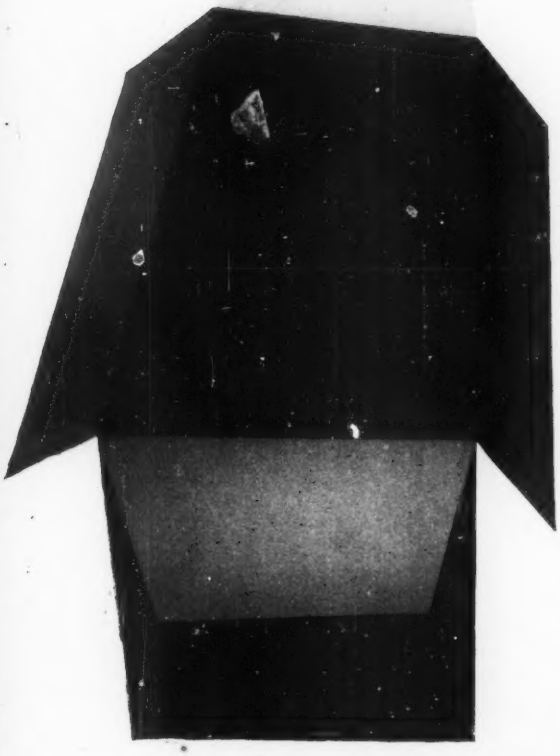


Rugged MIDNIGHT Vertical Case Sealer automatically lifts cases as it seals them—delivers filled cases near ceiling for overhead conveying to storage or shipping areas . . . frees aisles of lift trucks.

- Only 68" long . . . saves valuable production space
- Provides positive pressure for fast, efficient sealing (top and/or bottom) with less glue; squares cases and eliminates gap between flaps
- Thoroughly proven through years of high speed production in the largest packaging plants in the U.S.
- Discharges in any 90-degree direction. Wide variety of models can be "custom tailored" from standard parts to fit any packing line requirements. Adjustable.

For complete information call or write:

MIDNIGHT ENGINEERING CO.
701 S. La Salle St., Chicago 5, Ill., WE 9-4535
ORIGINATORS OF VERTICAL CASE COMPRESSION UNITS



INSIDE OUT

...or a package is a package is a package

Bonbons gay in a party dress, razor blades keen in business clothes, new TV snug in a corrugated coat... that's **packaging.** Large or little, belle-of-the-ball or plain-Jane... that's **packaging.** Paper, plastic, foil or fabric ....still **packaging.** Mightier than many single industries, and a growing part of most, **packaging** is the private domain of no synthetic "specialist," but a $20-billion market responsibility shared by many special interests and individuals. Whose head could wear so many hats? It takes more than one man to make a packaging decision, but it takes only **one magazine's** influence and audience to help you win it...

The Complete Authority of Packaging – A BRESKIN PUBLICATION

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U.S. PATENTS DIGEST

This digest includes each month a brief summary of the more important current patents which are of special interest to all packagers.* Edited by H. A. Levey.

Machine for Assembling, Securing and Banding Packages, William H. Giles and Anton Richard Frank (to Van Buren Machine Corp., Brooklyn, N.Y., a corporation of New York). U.S. 2,982,065, May 2. A machine for spotting adhesive on the inner faces of articles to be assembled in a stack comprising a rotary supporting member.

Packaging Apparatus, William Thompson, Jr. (to Roto Wrap Machine Co., Englewood, N.J., a corporation of New Jersey). U.S. 2,982,066, May 2. Apparatus for performing a predetermined operation on a moving web of material in which the faces of two elements are brought into contact with said web from opposite sides thereof and perform said operation while moving in the general direction of movement of said web, comprising a pair of eccentrics mounted on opposite sides of said web.

Wrapper Feeding Mechanism for Wrapping Machines Adapted to Handle Limp Films, John W. Smith (to Battle Creek Packaging Machines, Inc., Battle Creek, Mich.). U.S. 2,982,077, May 2. In a packaging machine having elevator means for advancing successive articles to be wrapped vertically between oppositely reciprocable bottom folding plates, means for advancing a sheet of limp synthetic wrapping film in flat relation to a centered position transverse to the path of movement of said articles in the general plane of said plates.

Box-Making Machines, George W. von Hofe and John F. Spano (to New Jersey Machine Corp., Hoboken, N.J., a corporation of New Jersey). U.S. 2,982,188, May 2. In a box-staving machine, in combination, a frame housing for the machine and having a plurality of open sides through which finished boxes may be discharged.

Multi-Can Carrier and Package, Noble André (to Andre-Matic Machinery Co., San Leandro, Calif., a corporation of California). U.S. 2,982,400, May 2. A multi-can package comprising a pair of parallel rows of upright cans in side-by-side relation; a rectangular sleeve formed from a single paperboard blank substantially enclosing said rows; said sleeve having a top wall, a bottom wall, a pair of opposed vertical side walls and opposite open ends.

Closure Cap and Package, George F. Chaplin (to Continental Can Co., Inc., New York, N.Y., a corporation of New York). U.S. 2,982,433, May 2. A hermetically sealed package which includes a container having a peripheral bead about its rim, a closure cap for coaction with said bead, which cap includes a shell having a circular top-panel.

Plastic Container, James M. Harrison (to Crown Machine Tool Co., Fort Worth, Tex., a corporation of Texas). U.S. 2,982,440, May 2. A plastic container suitable for canning foods in which a vacuum is formed in the container after it is filled and sealed.

Cartons, Edgar F. Collins (to Metal Edge Industries, a corporation of New Jersey). U.S. 2,982,463, May 2. A blank for assembly into a carton, said blank having flexibility and resilient characteristics similar to paperboard and comprising a central panel and side panel extending from and integral with the sides of said central panel along the full lengths of said sides.

Orientation and Transfer Apparatus for Wrapping Machine, Harry E. Engleson and Elmer D. Sramek (to Crompton & Knowles Packaging Corp., Holyoke, Mass., a corporation of Massachusetts). U.S. 2,983,092, May 9. A packaging machine for wrapping articles including a pair of wheels having circumferentially spaced pockets for receiving articles, said wheels being adjacent to each other and mounted to rotate on spaced parallel axes.

Display Carton, Gerald V. Richards (to Container Corp. of America, Chicago, Ill., a corporation of Delaware). U.S. 2,983,371, May 9. A display carton formed from a single blank of suitable sheet material such as foldable paperboard, comprising a pair of co-planar bottom-wall panels having mutually facing parallel inboard edges spaced transversely from each other on opposite sides of the longitudinal vertical center plane of the carton.

Compartmented Carton, Charles H. Turpin (to The Pillsbury Co., Minneapolis, Minn., a corporation of Delaware). U.S. 2,983,421, May 9. A sift-proof compartmented container resistant to passage of moisture and gases, which container comprises opposite front and back walls and intermediate end walls joining said opposite walls, each of said walls being rectangular.

Pouring-Spout Construction, Otto M. Miller, Jr. (to Continental Can Co., Inc., New York, N.Y., a corporation of New York). U.S. 2,983,422, May 9. A hinged pouring-spout construction for a paperboard carton having one wall formed by two panels which overlap.

Self-Locking Shipping Container, Robert F. Vail (to Massilon Container Co., Navarre, Ohio, a corporation of Ohio). U.S. 2,983,423, May 9. A re-usable pilferproof reinforced paperboard shipping-container construction including, a re-usable primary paperboard carton, a pair of re-usable secondary reinforcing-paperboard locking trays and a pair of paperboard locking inserts.

Vacuumizing and Sealing Machine for Plastic Bags, Thomas E. Piazze and Roy B. Cook (to Continental Can Co., Inc., New York, N.Y., a corporation of New York). U.S. 2,984,055, May 16. A method of sealing together the walls of a container of the type having a flexible, heat-sealable longer wall and an opposite heat-sealable shorter wall and which longer wall is adapted to extend over an air-evacuating member to provide an air-evacuating opening.

Method and Apparatus for Film Sealing, William E. Meissner (to American Viscose Corp., Philadelphia, Pa., a corporation of Delaware). U.S. 2,984,058, May 16. The method of capping a container, including the steps of forming a bubble of a tacky film-forming material, bringing the bubble and that portion of the container to be capped into contact with one another so that the tacky material forming the bubble adheres to the container and relatively rotating the bubble and container in such manner as to rupture the bubble.

Method and Apparatus for Re-forming Collapsed Container Bodies, James Henry Gordon (to American Can Co., New York, N.Y., a corporation of New Jersey). U.S. 2,984,162, May 16. Apparatus for re-forming collapsed tubular container bodies having completed flattened side seams, comprising a rotatable vacuumized drum, a pair of suction grippers pivotally mounted on said drum for receiving therebetween a collapsed and flattened tubular container body having scored fold lines thereon.

Packing for Fragile Articles, Richard L. Emery (to Keyes Fibre Co., Portland, Maine, a corporation of Maine). U.S. 2,984,345, May 16. A package comprising a packing case, a plurality of superimposed layers of elongated tubular articles in said packing case, each layer being cushioned from the other by a plurality of molded-pulp packing sheets at the ends and center.

Deep-Skirt Container Lid, Herbert L. Bennett (to American Can Co., New York, N.Y., a corporation of New Jersey). U.S. 2,984,381, May 16. In combination with a relatively flexible food container having an outwardly disposed hollow annular bead surrounding the mouth of said container, the improvement comprising a polystyrene two-position cover for sealably closing the container mouth during the inversion of said container.

Carton Lock, Morris W. Kuchenbecker (to American Can Co., New York, N.Y., a corporation of New Jersey). U.S. 2,984,400, May 16. A locking construction for a carton, the carton including a pair of opposed side walls and a pair of end closure flaps, each hinged to an end edge of one of said walls.

Method of Packaging Perishable Foods, James E. Smith (to Crown Zellerbach Corp., San Francisco, Calif., a corporation of Nevada). U.S. 2,984,573, May 16. In the method of packaging loaves of bread wrapped with a flexible-sheet wrapper extending about the respective loaves and provided with overlapping folds over an end portion of each loaf and wherein such folds are sealed by a sealing sheet having a thermoplastic heat-sealable coating.

Machine for Forming Packages with Tear String, George R. Wainwright (to Bartelt Engineering Co., Rockford, Ill.,

[*Continued on page 184*]

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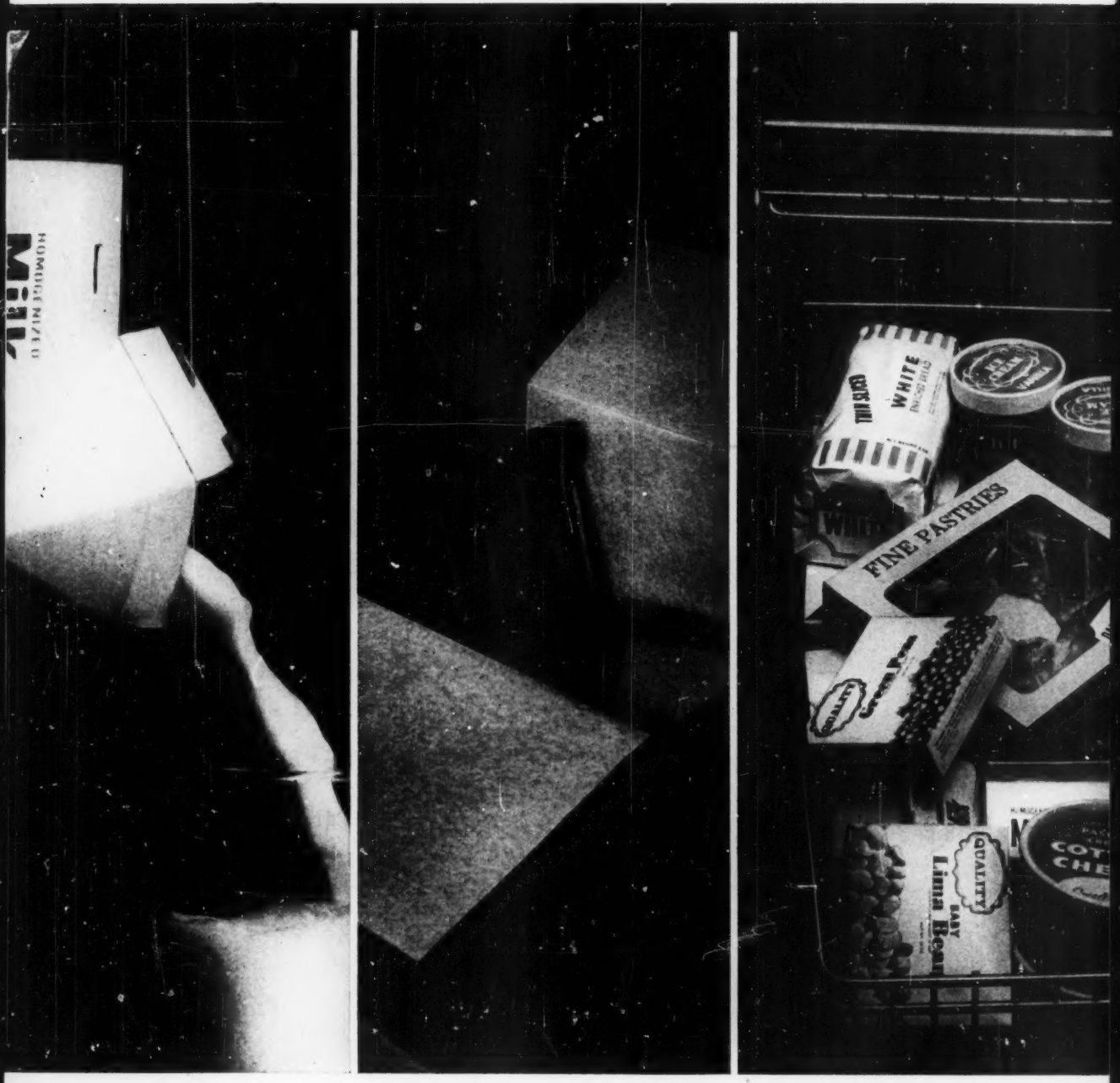

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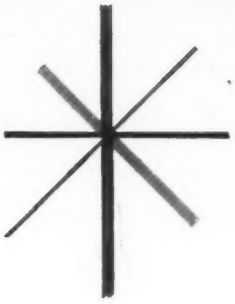

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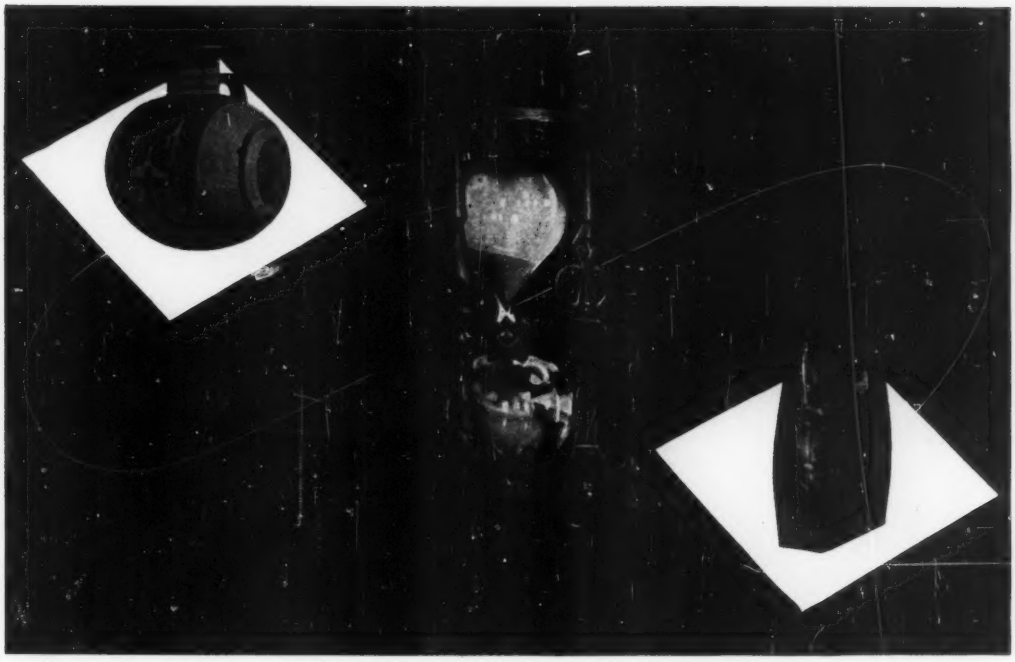

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Patents

[*Continued from page 178*]

a corporation of Illinois). U.S. 2,984,958, May 23. A packaging machine having, in combination, forming means for folding a sheet into two flexible strips disposed side by side in a vertical plane and joined at the bottom by a fold.

Paperboard Can Package, Lawrence Edwin Arneson (to Federal Paper Board Co., Inc., Bogota, N.J., a corporation of New York). U.S. 2,985,294, May 23. A package including a given number of cylindrical objects having relatively flat ends and positioned side by side, a sheet wrapped about the opposite ends and sides of said objects.

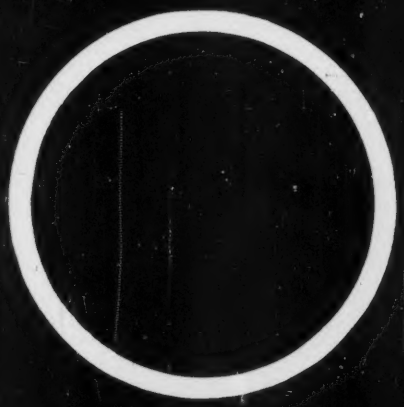
Self-Conforming Cover for Containers, Elmer T. Aldington (to American Can Co., New York, N.Y., a corporation of New Jersey). U.S. 2,985,354, May 23. A closure for the mouth end of a paper container having an outwardly sloping wall toward the mouth end terminating in an outwardly turned rim bead, said closure comprising a cover of flexible material, including a diaphragm portion.

Method and Mold for Making Seamless Polyurethane Containers, Franz Gottfried Reuter and Heinrich Kordes (to Mobay Chemical Co., Pittsburgh, Pa., a corporation of Delaware). U.S. 2,985,916, May 30. A method of making a seamless polyurethane-rubber container which comprises placing a hollow metal core adapted to be destroyed by the application of pressures above about one atmosphere and having a tubular fluid conduit bonded thereto to form a fluid-tight seal.

Container-Forming Apparatus and Method, Thomas Flint and Robert J. Robinson (to W. R. Grace & Co., Cambridge, Mass., a corporation of Connecticut). U.S. 2,986,076, May 30. A machine for making, from flexible tubing, containers open at one end and sealed at the other end, comprising a rotatable supply roll for carrying a supply of flexible and stretchable tubing, means for continuously advancing tubing from said roll at a uniform rate.

Wrapper Carton for Group Packaging of Different-Sized Articles, Homer W. Forrer (to The Mead Corp., Dayton, Ohio, a corporation of Ohio). U.S. 2,986,271, May 30. A package comprising a row of cans or the like enclosed by an open-ended wrapper folded and secured thereabout, said row having at least one can of greater height and an adjacent end can of lesser height, the cans in said row having chimes formed at the ends thereof and said wrapper comprising an elongated paperboard blank scored transversely to define a series of foldably connected partitions, an intermediate portion of said series being disposed laterally across said row of cans at one end thereof.

Dual-Purpose Shipping Carton, Wilbur A. Schaich (to Owens-Illinois Glass Co., a corporation of Ohio). U.S. 2,986,321, May 30. A container, demountable into three separate cartons and comprising two outer tubular cartons, each of said outer cartons having a plurality of side panels, hingedly connected in closed configuration, a first set of closure flaps respectively attached to one end of said side panels and adapted to fold in an inward direction.



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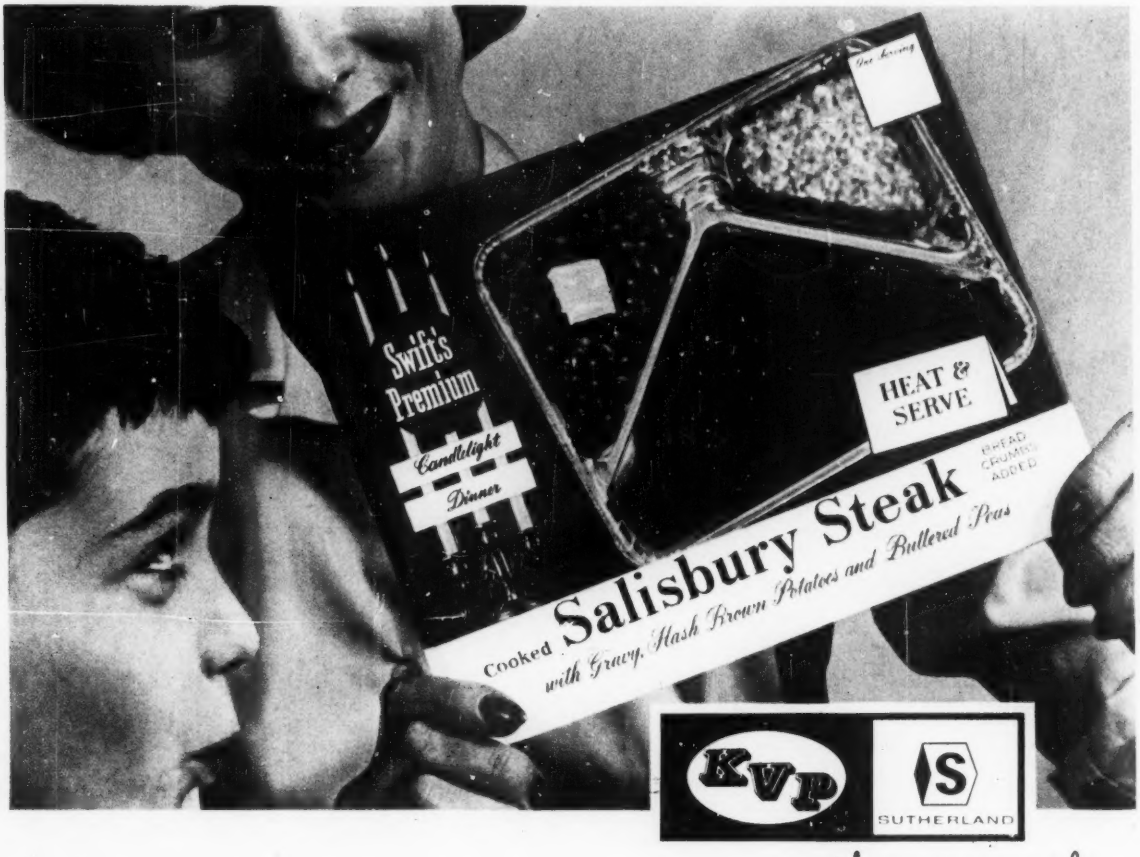

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EQUIPMENT • SUPPLIES • SERVICES

TRANSPARENT WRAP. Illustrated folder describes equipment that packages . . . protects . . . and displays your product in a "skin-type" transparent wrap. Picture story tells how equipment works. General description, specifications, prices, other data. Abbott Plastic Machine Corp. (151-H)

LABELING MACHINES. Assorted data bulletins describe complete line of labeling equipment, including labeling machines, cap lining (wadding) machine, vial and ampoule printing machine, etc. General description, features, complete specifications, other data. Amaco, Inc. (152-H)

ADHESIVES. 16-page illustrated booklet describes packaging and paper converting adhesives for carton and case sealing, folding cartons, window boxes, tube winding, kraft bags, etc. General descriptions, features, physical and chemical properties. Armour Alliance Industries, Industrial Adhesives Div. (153-H)

WEB-FED PRINTING. 224-page illustrated book covers complete line of web-fed printing and converting equipment. Discusses roll handling, rotary printing, sheeting, fabricating and die-cutting units; web processing equipment; electronic controls; and specialty equipment. Champlain Company, Inc. (154-H)

CARTON CLAMP ATTACHMENT. Illustrated folder describes palletless carton clamp attachment, designed to reduce handling costs by eliminating pallets and pallet maintenance problems. Can be used on trucks of 2,000 to 5,000 lbs. capacity, and will handle loads weighing up to 3,500 lbs. Clark Equipment Co. (155-H)

CONTAINERS, TUBING. Illustrated catalog describes complete line of containers and tubing—including plain can, friction plug can, convolute can. Also covers tube with telescope ends, 2-piece telescope with curled and disced ends, 3-piece telescope with metal ends, etc. General information, dimensions, other data. The Cleveland Container Co. (156-H)

CARTON SYSTEM. Illustrated folder with sample describes new carton system that offers no overwrap; no gluing; strong, rigid construction; fast, simple setting up and closing; automatic heat sealing, etc. General information, specifications, other data. Continental Can Company. (157-H)

CONVEYORS. Illustrated data bulletins describe live roll conveyors with end drive or center drive. General information, features, specifications, schematic diagrams. Conveyor Specialty Company, Inc. (158-H)

INDUSTRIAL FELT. Illustrated data booklet gives comparative properties of industrial felt. Covers rolls, sheets, strips, washers, channels, rods, wheels, extrusions. General information, complete specifications, typical uses. Continental Felt Company, Inc. (159-H)

HEAT SEALING. Illustrated bulletin describes equipment for heat sealing molded plastic parts — whether square, irregular or round shapes. Offers completely automatic sealing cycle. Accommodates a wide variety of shapes and sizes of hollow molded parts. General information, features, other data. Cosom Engineering Corp. (160-H)

INDUSTRIAL LIMIT SWITCHES. Illustrated folder describes complete line of industrial limit switches. 45 contact arrangements are shown, together with descriptions and wiring diagrams. Over 150 lever styles are listed. Technical information on different bases, lever styles, ampere ratings, operating data and temperature range. R. B. Denison Mfg. Co. (161-H)

PRINT SMOOTHNESS TESTER. Illustrated folder describes bench model gravure press that employs the gravure principle, but includes special design features for testing paperboard in development and mill control work. Predicts qualitative board differences, detects minute surface defects. General information, important features, other data. Diamond National Corp. The Gardner Div. (162-H)

SILICONE COATINGS. Illustrated folder with samples describes silicone coatings that impart excellent non-sticking or release characteristics to a variety of package liners, processing papers, interleaving and slip-sheets. General information, typical applications, other data. Dow Corning Corp. (163-H)

STRETCH PACKAGING. Illustrated folder describes stretch packaging machine that offers complete packaging on one machine at one time. Dependable, continuous operation; minimum number of operators for entire operation; designed for minimum maintenance. General description, dimensions, features, other data. Downingtown Paper Company. (164-H)

GLUING SYSTEM. Illustrated brochure describes forced-feed gluing system that offers direct glue application . . . no glue parts to clean or re-fill. General description, advantages, specifications, other data. Emhart Mfg. Co. (165-H)

BAGGING, SEALING. Illustrated folder describes bag packager and automatic bag sealer. When used in combination, they deliver 1,200-plus loaded packages per hour. General information, features, applications, other data. Errich International Corp. (166-H)

ELECTRONIC TIMER. Illustrated brochure describes electronic timer suitable for a wide variety of industrial and laboratory uses involving automatic operation of electric circuits at pre-selected, adjustable time intervals and sequences. Farmer Electric Products Company, Inc. (167-H)

AIR MOTORS, COMPRESSORS. Illustrated catalog describes complete line of rotary air products including air motors, air compressors, vacuum pumps, oil-less air compressors, oil-less vacuum pumps. General information, specifications, dimensions, other data. Gast Mfg. Corp. (168-H)

PACKAGING FILM. Illustrated folder describes tough clear wrap that seals permanently without rewraps. Moisture-proof package that eliminates shrink loss. Considered the most economical method for packaging smoked meats. General information, features, other data. W. R. Grace & Co., Cryovac Div. (169-H)

AUTOMATIC WRAPPING MACHINES. Illustrated folder describes line of automatic wrapping machines. Also covers tear-a-tape attachment, automatic loading attachment, end-labeler. General information, features, applications, other data. Hayssen Mfg. Company (170-H)

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DOCKBOARD. Illustrated bulletin describes simple mechanical dockboard with six-way adjustment. Offers new dock safety and efficiency, because it protects the truck, protects the cargo, protects itself. Complete information, advantages, typical installations. Kelley Company, Inc. (172-H)

POLYETHYLENES. Illustrated book covers complete family of polyethylenes—low, medium and high densities. Covers typical physical properties, including density, melt index, tensile yield strength, stiffness in flexure, etc. Koppers Company, Inc. (173-H)

PLASTIC CONTAINERS. Illustrated folder describes complete line of plastic containers—including threaded containers with metal and plastic screw cap closures, shoulder containers with polyethylene slip-on closures, shell containers, with polyethylene plug closures, and beaded containers with polyethylene snap-caps or plug closures. Lermer Plastics, Inc. (174-H)

PLASTIC BOXES. Illustrated bulletin describes plastic boxes for packaging pharmaceuticals, cosmetics, toys, notions, jewelry, religious items, fishing tackle, office supplies. Wide variety of colors to choose from. Containers can be personalized by hot, roll leaf stamping. M & L Plastic Corp. (175-H)

FLEXIBLE PACKAGING. Illustrated brochure describes equipment for automated flexible packaging of potato chips and countless other semi-free flowing products. Complete information, advantages, applications, other data. Mira-Pak, Inc. (176-H)

TRANSPARENT PACKAGING. Illustrated book describes complete line of containers for transparent packaging, including rounds, cones and cannisters, ¾ rounds, ovals, displays, art shapes, squares and rectangles, etc. Acetate Box Corporation. (177-H)

WRINKLE PREVENTION. Folder and assorted bulletins describe bow-shaped roll that prevents wrinkles, soft spots, baggy edges. Increases sheet width. General information, specifications, typical applications. Mount Hope Machinery Co. (178-H)

CASE OPENING. Illustrated brochure describes automatic case opening, loading and sealing equipment. Covers single tier case loader, multiple tier case loader, case opener and positioner, automatic side case gluer, and compression sealer. J. L. Ferguson Company. (179-H)

VACUUM FORMING MACHINES. Illustrated brochure describes line of vacuum forming machines that handle polyethylene, polystyrene, acetate, vinyl, butyrate, and all other thermo-forming plastics. Plast-O-Craft Co., Inc. (180-H)

GLUING, CEMENTING. Illustrated folder describes line of gluing, cementing, coating and laminating machines. For all types hot and cold glues, latex, varnishes, lacquers, resins, paints, thermoplastics. General information, specifications, typical applications. Potdevin Machine Co. (181-H)

TRANSPARENT PACKAGING. Illustrated bulletin describes line of acetate-cardboard, semi-rigid, transparent packages that can be custom made to meet requirements. All sizes and shapes, complete design and manufacturing facilities, high speed production and delivery. SLM Plastics. (182-H)

LITHOGRAPH PRESS. Illustrated book describes new 50-inch rotary heat set lithograph press. Electronically-controlled quality, one to five colors, both sides of web, 17,500 sq. in. of printing area per press impression, 24,000 impressions per hour, etc. Safran Printing Company. (183-H)

FASTENINGS, STAPLING. Illustrated booklet describes line of fastening and stapling equipment. Covers first portable, air-powered, magazine-fed clip applicator for use in the assembly of spring units, stapling hammers, tackers, etc. Paslode Company. (184-H)

STEEL STRAPPING. Illustrated folder covers steel strapping system and when and where to use it. For improved packaging and packing. Also, assorted data sheets give number of specific applications and advantages. Stanley Steel Strapping. (185-H)

ROTARY VACUUM FILLER. Illustrated book describes rotary automatic filler—a custom-engineered machine precisely adapted to handle specific types of containers and liquid consistencies. Speed can be synchronized to packaging line requirements. Operating features, advantages, applications, other data. U. S. Bottlers Machinery Company (186-H)

PARTS FEEDER. Illustrated brochure describes parts feeder for feeding, orienting and counting up to 200,000 items per hour. General information, unique features, applications. U. S. Engineering Company, Count-O-Matic, Inc., Div. (187-H)

ULTRASONIC SEALING Illustrated folder describes equipment for ultra sonic sealing. Seals all film thicknesses from ¼ mil to 40 mils at speeds up to 600 linear inches per minute. Produces a smooth, distortion-free bond. General information, advantages, applications, other data. Ultra Sonic Seal, Inc. (188-H)

PAPERBOARD CONTAINERS. Spiral-bound book discusses manufacturing opportunities in Georgia for paperboard containers. Especially for the food and apparel industry. Covers Southeastern markets, present location of paperboard container plants, size of market area, forecast. Georgia Institute of Technology. (189-H)

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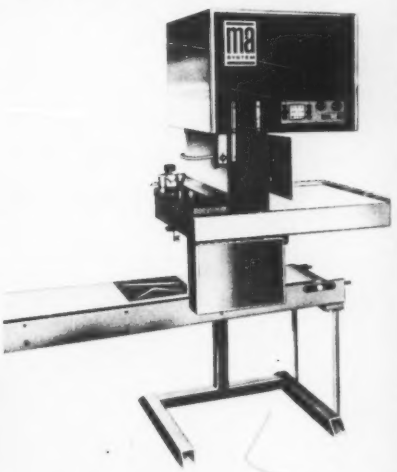
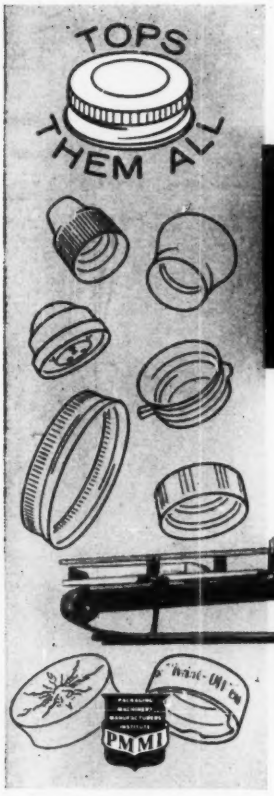
FUNCTION: Completely packages products in polyethylene film—in one operation—in your plant. Produces inexpensive, loose or shrink-fit polyethylene packages around regular, odd-shaped or out-sized products of all types. **ADVANTAGES:** Uses polyethylene roll stock. Saves up to 50% in material costs over ready-made bags and other packaging methods and materials. ■ Boosts in-plant packaging efficiency, produces up to 30 packages per minute at reduced labor costs. ■ Provides a self-selling plain or printed package that protects, displays and glamourizes. **COST:** Complete MA Systems normally range from $2000 to $4000. **A CASE IN POINT:** National Lock Company uses MA Systems with four-side sealer and rack package attachments to package its line of cabinet hardware in clear, hang-up polyethylene packages—replacing self-sealer kraft envelopes printed with contents lists. **RESULTS:** Transparent rack package has boosted sales by showing product, and opened up hardware chain market. Material costs cut 51%, labor costs per-1000-packages reduced considerably—and only half the floor space needed for packaging operation. **FREE OFFER:** Let the MA System test-package your product in durable, transparent polyethylene. Send us a sample, or write for complete details on this revolutionary packaging system to either Kordite Company, Macedon, New York or Mehl Manufacturing Company, 2057 Reading Road, Cincinnati 2, Ohio.

ma SYSTEM

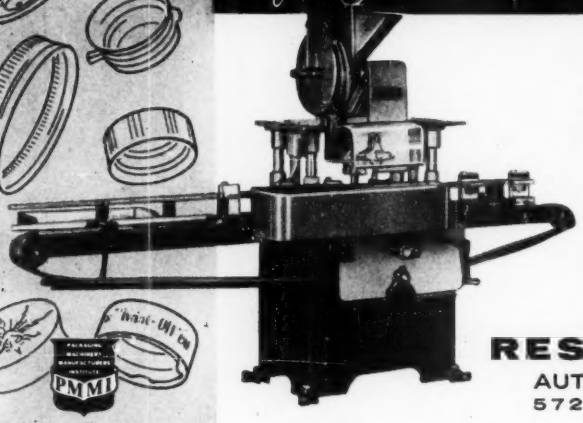




Automatically sorts, feeds and applies
up to 120 or more innerseals per minute!

RESINA

fully automatic INNERSEALERS



VERSATILITY—Can be installed in existing lines with all standard filling machines.

FLEXIBILITY—Handles a wide variety of containers and lids—from ½ pint to 2 gallons. Lid range from ½" to 1½" diameter.

SIMPLICITY—No change of parts required for container changeover. Universal timing unit automatically indexes your entire container range.

MAINTENANCE—No skilled help necessary for maintenance or changeover of innerseal sizes.

Descriptive literature and specifications on request.

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AUTOMATIC MACHINERY COMPANY, INC.
572 SMITH STREET BROOKLYN 31, N.Y.
Agents in Principal Cities

Are you having your fill of aggravation ?

SWITCH TO mrm FILLING MACHINES

the machines that think for themselves!

- **Simplest design!**
- **Fast Changeover!**
- **Utmost Versatility!**
- **No skilled help necessary!**
- **Minimum downtime!**

MRM is by far, the leading designer and producer of liquid filling machines. Check any manufacturer who is particular about his product and package . . . with a respect for critical care of production costs . . . chances are you will find MRM's setting the pace.

Submit samples of your containers (filled and labeled) plus your approximate production requirements and we will supply you with detailed recommendations and quotations on the machine best suited for your needs. You are not obligated in any way.

mrm COMPANY, INC. MP-8 191 Berry Street, Brooklyn 11, N. Y.
Manufacturers of a complete line of liquid filling machines, labeling machines and conveying equipment.

F&DA: 60 days more

A new deadline for obtaining safety clearances for food additives under the Food, Drug & Cosmetic Act has been announced by the Food & Drug Administration.

Although the new deadline date of Sept. 1, 1961, gives food packagers and their suppliers 60 additional days in which to meet requirements of the law, F&DA stressed that no extension has been or can be granted unless the substance involved can be shown to present no undue risk to the public health during the extension period.

Under a new law signed by President Kennedy in April, previously granted or pending extensions were continued in effect until July 1, 1961, to permit the filing of needed information and its evaluation by F&DA. A substantial number of requests for further extensions has caused the new dispensation, F&DA announced. ●

Wax-laminated carton

[*Continued from page 142*]

and packaging-materials spoilage.

Another factor to be considered in determining the cost of a laminated carton is that lamination increases stiffness, especially in the cross-grain direction. For example, a 0.017-in. laminated structure composed of a 0.015-in., 180-lb. cylinder board laminated to a 0.002-in., 33-lb. opaque paper would have a Taber cross-grain stiffness of approximately 75. A 0.017-in. chipboard of the same basic quality would have a cross-grain stiffness of only approximately 40. By another yardstick, an unlaminated chipboard needs a caliper in the area of 0.020 in. for the 75 Taber stiffness of the 0.017-in. laminated structure.

Lamination does not significantly increase machine-directional stiffness of a chip cylinder board over that which would normally be expected with a similar increase in board caliper. This phenomenon results in a laminated cylinder board having a machine-direction to cross-direction stiffness ratio of about 3 to 1 compared with a typical cylinder chipboard which has a machine direction to cross direction on stiffness ratio of about 5 to 1.

The more square sheet obtained with the laminated structure over

how the unique

100% POLYCLEER®

RAK-IT-PAK

patent pending

helped White Cross

BOOST PROFITS

With its bag and header *both* made of tough, sparkling Polycleer Material, the new all-in-one Rak-It-Pak display bag will make your product stand out and sell *more* . . . protect it until used . . . cut your packaging and labor costs 40%-60%.

NO PAPER HEADER

. . . no cardboard insert. Rak-It-Pak's sturdy built-in header *alone* saves paper costs, printing, stapling, grommeting.

SELLS YOUR PRODUCT

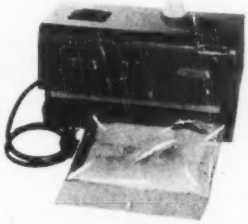
"on sight"

Rak-It-Pak keeps your product dust free and *bright in your customer's eye* until sold.

SAVES ON LOADING AND SEALING, TOO!

Simply load and seal the Rak-It-Pak and your product is ready for market. Reduces your labor costs, increases your profits.

For rapid feeding and improved sealing, Northland recommends — and supplies — the new Bag-O-Matic Poly Heat Sealer.

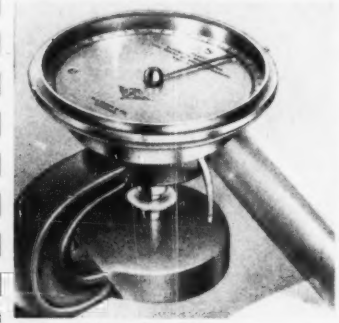


NORTHLAND designs, produces and prints the Rak-It-Pak in 1-2-3 colors . . . many sizes, styles and gauges — for quantity users. Write or call Northland today for details and samples.

NORTHLAND BAG CORPORATION

53-K2 School Street, Yonkers, N. Y. Greenleaf 6-1095

EXACT MICROMETERS
for calipering thicknesses of packaging materials from 1/1000th to 10/-000ths of an inch



Cady 10/1000ths Micrometer gives direct reading on thicknesses to 10/1000ths of an inch. Dial is glass covered; capacity is 50000ths of an inch.

New portable Cady Micrometer has 2½ inch throat designed for exact thickness measurement in the plant or on the road. Graduations: 1/1000ths of an inch or hundredths of a millimeter. Capacity is one-half inch. Direct reading glassed dial.

Vernier converts thousandths to ten-thousandths. Designed for those requiring dead weight anvil action, vernier scale is attached to indicator blade and registers with thousandths graduations on dial. All Cady Micrometers meet ASTM and TAPPI standards.

Write for catalog & prices
Micrometers/Scales/Burst Testers
E. J. CADY & COMPANY
642 N. Harlem Ave.
River Forest, Illinois

that of the standard cylinder sheet is of significance when the weight and caliper of the stock to be used for a given product are established on the basis of the minimum cross-grain stiffness required to meet the end-use requirement of the product. Figures 4 and 5 show caliper versus stiffness curves on a typical cylinder board versus that of a laminated structure, using this theory.

Conclusions

A comparison of the printed, wax-laminated cereal carton with a waxed-paper-overwrapped, unprinted carton indicated that these conclusions were valid:

1. The wax-laminated carton increased the product's shelf life up to 30%.
2. The wax-laminated carton had superior convenience features for the consumer.
3. The wax-laminated carton gave the advertising and marketing people a package which was desirable for promotional purposes and design work.
4. Finished package costs were not increased.

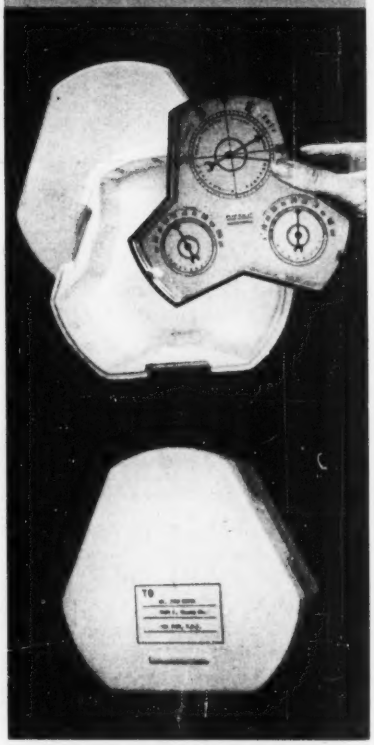
Appendage 1

G. F. Laminated-Board Creased WVT Test Procedure. This basic test procedure is conducted per TAPPI T 465 with the exception of test-specimen preparation. Two scores, 1 in. apart (like railroad tracks), are centered on the specimen. The specimen is then turned over and two more scores are made on the reverse side. This second set of scores is run perpendicular to the first set. All of the scores are then bent to 180 degrees.

Appendage 2

G. F. Wax Laminant Continuity Test. The test specimen consists of a 5-in.-wide strip taken across the laminated web. The leading edge, in the 5-in.-wide direction, is delaminated on a hotplate and the sample is then placed in a zero deg. F. cabinet for 10 minutes. The lamination is then separated by the tester while the laminated structure is held within the cabinet. The lamination cannot be separated if the specimen is removed from the cabinet. The wax will adhere to the board segment of the lamination and wax continuity can then be checked with an iodine stain test. ●

package by
WEBER
product by
HONEYWELL



Designed and engineered by Weber, PROTECTION PLUS is achieved in this expandable polystyrene* container. It's light; it's durable . . . a custom-molded self-mailer with a custom purpose: to deliver a delicate weather instrument safely and at minimum cost from coast to coast.

The Weber skills that solved this packaging problem are at your disposal, too . . . consultation, layout, design, mold-making, molding and finishing in any size, shape and color.

*Koppers Dylite

Weber Plastics, Inc., Stevens Point, Wisconsin

WEBER PLASTICS
CUSTOM MOLDERS OF EXPANDABLE POLYSTYRENE

Monarch's Compact SENSOMATIC Adapts to Any Type Product

New Sensomatic imprints and applies up to 180 labels a minute, right on your production line. Gives you labels of uniform fine quality—at a saving! No need for large label inventories, no label obsolescence, no printing delays. And no delivery problems!

LOW COST LEASE PLAN AVAILABLE. Call in a Monarch Industrial Salesman to discuss the right answer to *your* label situation. He's backed by Monarch's 70 years of experience. Monarch's label design department is at your service.

Why not write or phone today, at no obligation, of course!

THE MONARCH MARKING SYSTEM COMPANY

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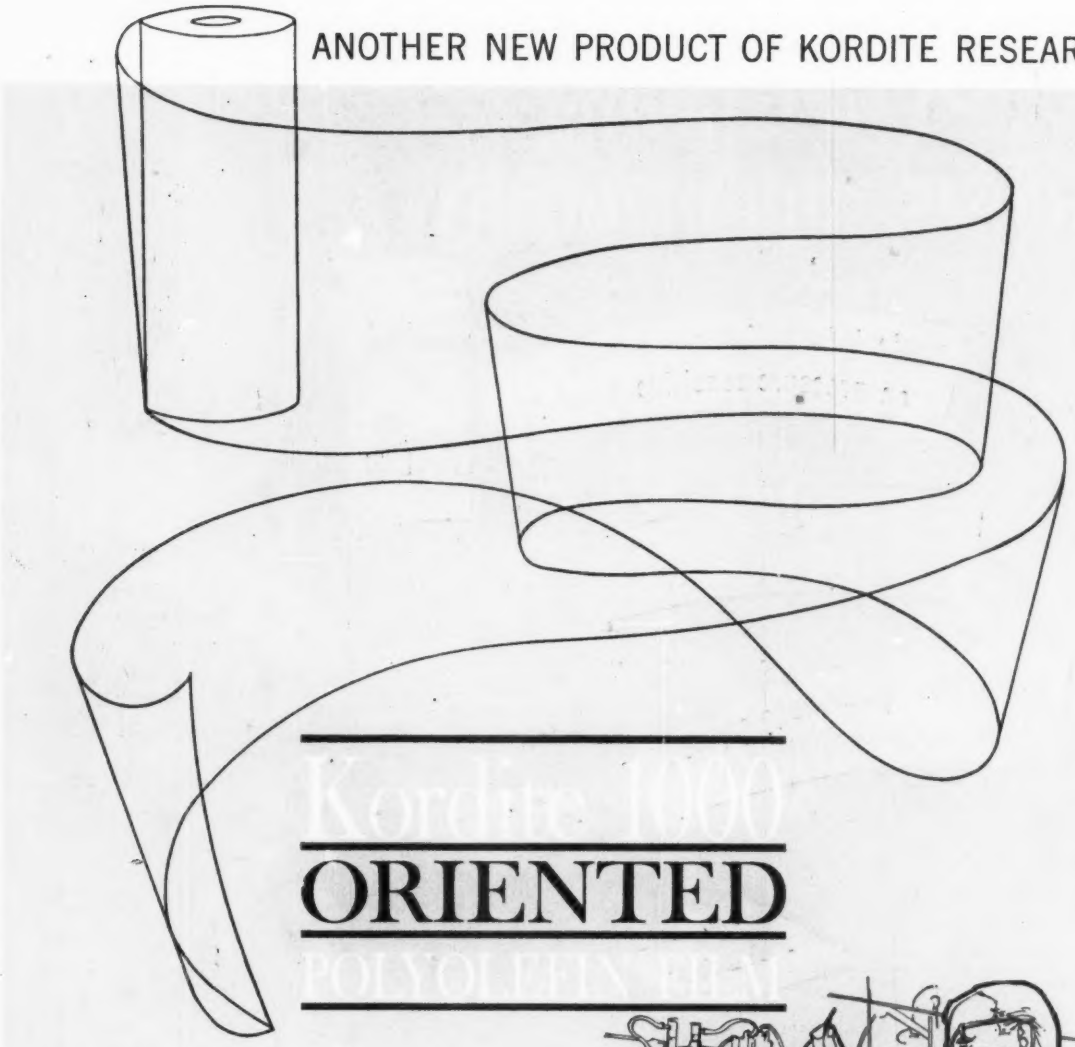
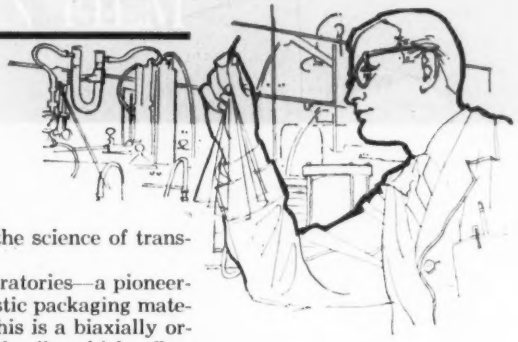
ANOTHER NEW PRODUCT OF KORDITE RESEARCH



Kordite 1000 ORIENTED POLYOLEFIN FILM



A significant contribution to the science of transparent film.

From Kordite research laboratories—a pioneering source of new ideas in plastic packaging materials—comes Kordite 1000. This is a biaxially oriented film of the polyolefin family which offers these paramount advantages:

Gloss and clarity unequalled by any other polyolefin film Exceptional tensile strength—far stronger than conventional films, and equal to that of aluminum Unusual economy: great strength and rigidity permit use of extremely thin film Outstanding moisture resistance Double the gas barrier properties of conventional polyolefins.

Kordite 1000 is extremely versatile. Its wide range of applications is exemplified in these typical uses: laminations, film metalizing, adhesive-sealed bags.

Further information available from:

Kordite

PACKAGING FILM DIVISION
KORDITE CO., MACEDON, N. Y.
A DIVISION OF NATIONAL DISTILLERS & CHEMICAL CORP.

Seventh International Packaging Exposition

Plans are completed to welcome in England visitors from all over the world at the Seventh International Packaging Exhibition, scheduled to be held at Olympia in London from Sept. 5 through 15.

The significance of this event is indicated by the increased size of this year's exhibition, covering 300,000 sq. ft. of floor space, more than twice as much as was devoted to this activity in 1955.

Reportedly, 300 exhibitors have signed up for stands to present the newest developments in packaging materials, machinery and techniques. In addition to exhibits by manufacturers in the U. K., the list includes more than 70 from Germany, Switzerland, Austria, France, Italy, Holland, Belgium, Denmark, Sweden, Canada and the U. S.

The show will also cover bottling and package handling. Among the supplies displayed in the stands will be the newest types of metal, glass, plastics, fibre and aerosol containers, together with many new and different types of closures.

Suppliers will also be showing improved protective papers and latest developments in cellophane and plastics films with high resistance to moisture, acids and temperature variations, in addition to new sealing tapes, adhesives, as well as inks and printing techniques.

Packaging equipment will include high-speed labeling equipment, printing and converting machinery, check-weighing units and electronic devices for detecting the presence of foreign matter in packages, particularly for foodstuffs.

A number of American companies or their foreign affiliates are expected to be among the exhibitors. Among familiar names noted on early lists are: Bakelite, Dewey & Almy, Minnesota Mining & Mfg., National Adhesives, Permacel Tapes, Pitney-Bowes, Signode, White Cap and Wright Machinery.

The importance of the occasion for manufacturers from all over the world is emphasized by the fact that the European Packaging Federation, with representatives from 18 member countries, will hold its annual general meeting in London simultaneously with the exhibition.

This year's Eurostar packaging competition will be held in London immediately before the show. Eligible packages must have been introduced in their national markets on or after Jan. 1, 1960, and must have received a national packaging award in a European country during 1960 or 1961. This was a welcome stipulation to eliminate awards to packages that had been on the market very much longer. The panel of judges will make its selections Sept. 7 and 8, and will announce the winners on Sept. 11.

Of particular interest to packagers from the U. S., it is believed, will be a conference on "Consumer Packaging for Export," to be held concurrently with the exposition. This activity has been organized by the British Institute of Packaging in cooperation with the Western Hemisphere Exports Council and the Exports Council for Europe. Scheduled for the program will be leading industrialists from Europe, the Commonwealth and from North and South America. ●

Shrink: a new dimension in films

[*Continued from page 121*]

"sleeper" as a shrinkable material for several years, but is now emerging as a strong competitor to polyvinylidene chloride film in the frozen meat and poultry field.

Although it is relatively expensive, its strength permits the use of thinner gauges. Contour-bottomed bags are being fabricated from shrinkable polyester, reportedly at prices that are comparable with those of other shrink materials.

In use, these bags are shrunk around such abrasive items as pepper-studded cured meats or such awkwardly shaped birds as ducks and turkeys.[5] The film resists perforation, tear and abrasion, and provides a strong barrier to gasses and water vapor. It also retains its flexibility under adverse freezing and handling conditions.

The extreme clarity of this ½-mil film is an important plus in merchandising these products. Shrinkable polyester is also projected for

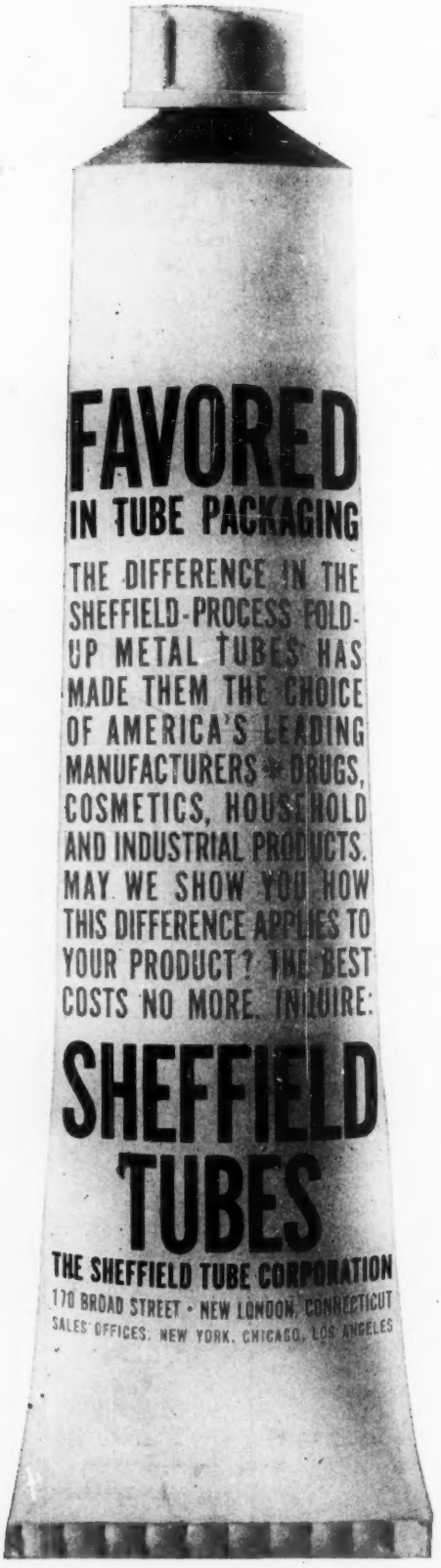
[5]See "Thin Skin That's Tough," MODERN PACKAGING, April, 1961, p. 163.

Good Packaging

...the better half of every sale

RICHARDSON TAYLOR-GLOBE

CINCINNATI, Kirby 1-1847 • NEW YORK, LOngacre 4-6623


FAVORED
IN TUBE PACKAGING
THE DIFFERENCE IN THE SHEFFIELD-PROCESS FOLD-UP METAL TUBES HAS MADE THEM THE CHOICE OF AMERICA'S LEADING MANUFACTURERS * DRUGS, COSMETICS, HOUSEHOLD AND INDUSTRIAL PRODUCTS. MAY WE SHOW YOU HOW THIS DIFFERENCE APPLIES TO YOUR PRODUCT? THE BEST COSTS NO MORE. INQUIRE:
SHEFFIELD TUBES
THE SHEFFIELD TUBE CORPORATION
170 BROAD STREET • NEW LONDON, CONNECTICUT
SALES OFFICES: NEW YORK, CHICAGO, LOS ANGELES

bundling applications where great strength is a must.

Still another competitor in this packaging area is a relatively new copolymer film of vinyl chloride and vinylidene chloride, which is fabricated into bags and casings for packaging processed meats, frozen poultry, turkeys, fish and cheeses. With a maximum shrink of 40 to 50%, this moderately priced material has high barrier properties and good clarity, and it is very resistant to both chemicals and greases.

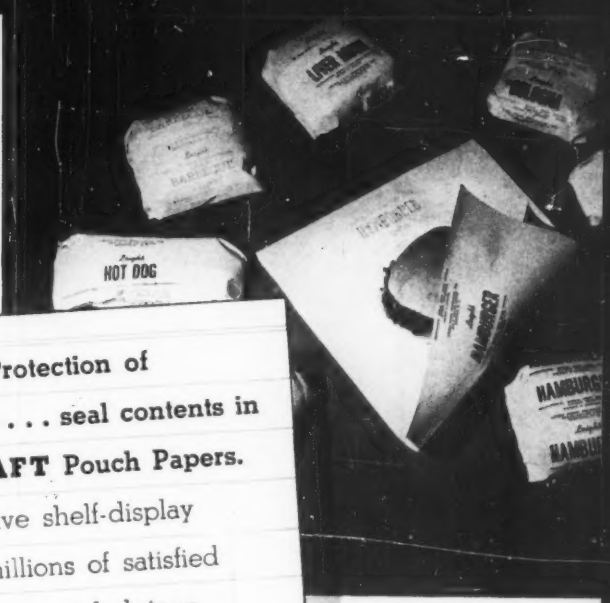
Now appearing in packaging applications is another polymer film for shrink packaging which is new to packaging even in unoriented form—polypropylene. This film shows tremendous promise in shrink applications because orientation greatly improves its clarity, strength and barrier properties. A moderately priced film now, shrinkable polypropylene should be a very economical film if large-volume production brings the expected price reductions. Its barrier properties are exceptional and it has great strength. So far, two such films have made their appearance, but several more are under development and are expected on the market before the end of the year.

A pioneer application of one shrinkable polypropylene is for paper pads and notepaper produced by Barshep Mfg. Co., Chelsea, Mass., where it gives the strength and dimensional stability needed for a product shelf life of up to a year. The glossy appearance of this film adds merchandising impact to simple printing on inexpensive paper.

Polypropylene film has also been used as a wrap for records and albums marketed by several companies and it is regarded as a strong competitor to more established films in this field.

New applications of shrink films are sure to arise as more packagers adapt the versatile materials to their particular needs. The relative positions of the materials may well change as volume use enables prices to be reduced on some and technological development improves the properties and advantages of others.

The process of orientation has created a whole new area of packaging and machine techniques that are just beginning to be exploited and which are sure to benefit the entire packaging field. ●



PACKAGING

For Insured Protection of Flavor and Freshness . . . seal contents in Thilco POLY-KRAFT Pouch Papers.

Insert in attractive shelf-display cartons. Serves millions of satisfied customers with repeat helpings.

One Protective Ingredient Important to All!

Vital to protecting the savory flavor and freshness of these popular food products in Thilco's versatile, heat sealable POLY-KRAFT Pouch Papers — the packaging ingredient that safeguards products from M.V.T. deterioration by sealing moisture-vapor *in* or *out* where you want it!

Like many *foods* of distinctive flavor and quality, Thilco POLY-KRAFT is not a single, ordinary compound, but a blend of special treated ingredient papers combined with poly, foil, cellophane, glassine and other papers or materials to best fulfill the most individual protective appetities your products may hunger for.

Thilco POLY-KRAFT is available in lightweight blends for automatic Pouch Packaging, box liners and bags, or, in heavyweight blends for bulk packaging and carton overwraps. Furnished in rolls for automatic forming/filling machines — in cut size sheets—or in ready-made paste, glue or heat-sealable bags.

For one of the lowest cost, *unexcelled* M.V.T. protective packaging ingredient you can buy, consult with us for name of the Thilco POLY-KRAFT representative best located to serve you.

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Provides Complete Information

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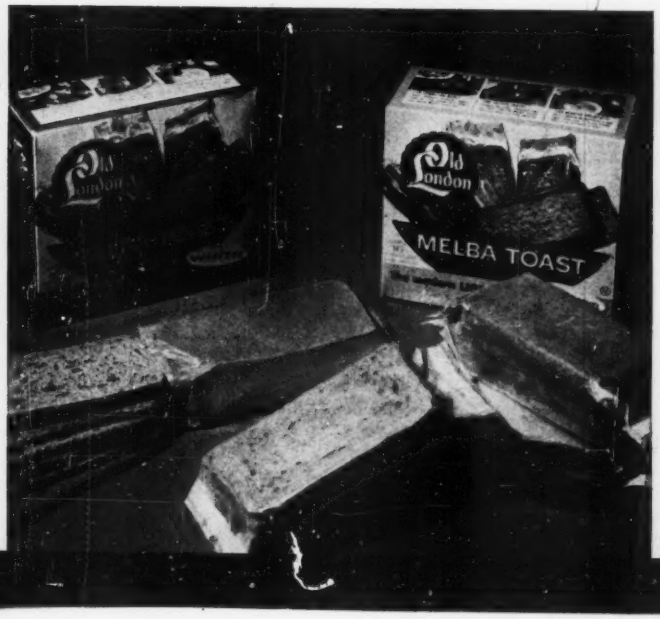
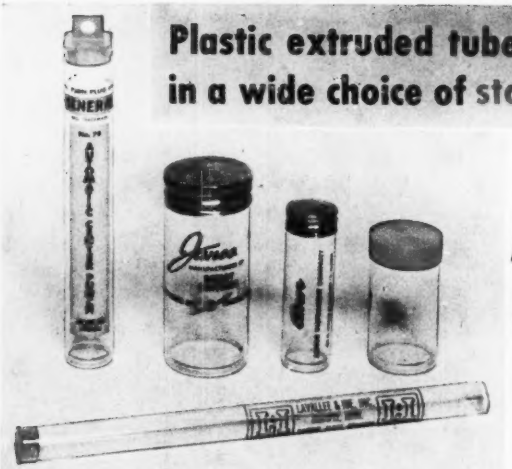
THILCO
Functional Papers





Plastic extruded tube CONTAINERS in a wide choice of stock diameters

available in
ANY LENGTH
with screw caps, colorful friction or hang-up closures*
DECORATED
in as many as
4 COLORS

FLEX CONTAINERS are **custom made** to your exact length requirements, to suit your product perfectly, from modest quantities to large volume runs . . . at **no mold or tooling cost** to you!

Flex

We offer extrusion and closure molding facilities for special packaging needs and invite inquiries.

Write for free samples and catalog. * Pat. pending

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show 'em AND sell 'em...
with Visual Packaging!

Comet "QUICK PAK"

The only fully automatic skin packaging and slitting machine. Gives you assured lower cost packaging and increased production. Automatic Blister Forming, Slitting and Unloading of Vacuum Formed Products up to 5½" high.

Features full versatility for captive and custom operations.

THE MODERN WAY TO BETTER SALES

VISUAL PACKAGING cuts packaging costs, keeps products clean, eliminates loss from counter handling.

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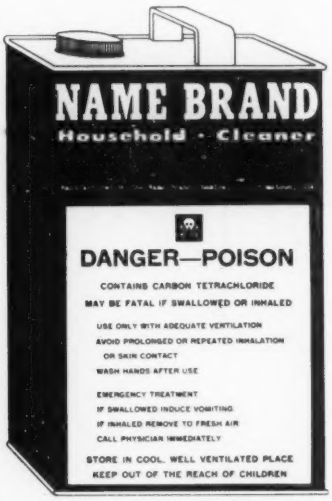
Comet **INDUSTRIES INC.**
9857 Franklin Avenue
Franklin Park, Illinois

VACUUM FORMING MACHINES FOR ALL NEEDS — BLISTERS TO BOATS

Hazardous-label law

All indications point to an extension of the Aug. 1 deadline for compliance with the Federal Hazardous Substances Labeling Act, a law which requires that no hazardous household substance—which covers


NAME BRAND
Household · Cleaner
DANGER—POISON
CONTAINS CARBON TETRACHLORIDE
MAY BE FATAL IF SWALLOWED OR INHALED
USE ONLY WITH ADEQUATE VENTILATION
AVOID PROLONGED OR REPEATED INHALATION OR SKIN CONTACT
WASH HANDS AFTER USE
EMERGENCY TREATMENT
IF SWALLOWED INDUCE VOMITING
IF INHALED REMOVE TO FRESH AIR
CALL PHYSICIAN IMMEDIATELY
STORE IN COOL, WELL VENTILATED PLACE
KEEP OUT OF THE REACH OF CHILDREN

F&DA-approved example of type of precautionary label required under Hazardous Substances Labeling Law.

hundreds of volatile, flammable, caustic or poisonous products—can be shipped in interstate commerce unless its container carries a clearly worded precautionary label.

The new law, which is under the jurisdiction of the Food & Drug Administration, already is in effect for products which are highly toxic or are extremely flammable, and flammable liquids, according to interpretive regulations published by F&DA. However, as of mid-July the Government was still in the process of drafting final regulations covering definitions of such hazards as: toxic, irritant, corrosive, flammable solids, flammability of self-pressurizing containers and strong sensitizers. The expectation is that final regulations will not be published before the Aug. 1 deadline, which would indicate postponement of the date for compliance with the law.

In any case, packagers whose products come under the law must comply with provisions of the act by Jan. 31, 1962, the final permissible legal deadline.

The reason for the expected postponement of the compliance date

[*Continued on page 202*]

Leading Packagers know—

Rowell excels* in Premium quality Boxes --without added Premium Cost!

***ex·cel** (ĕk sĕl'), v. 1. to surpass, be superior to; outdo.—v. i. 2. to surpass others, or transcend in some specific respect. —**Syn. 1** e.g. as **Rowell** *is noted for excellence in the manufacture of set-up boxes of fine construction, having close tolerances.* For giving careful attention to detail for special requirements to achieve *appropriateness* (an important concept in today's merchandising) to dramatize, to bring out the individuality of your product. To provide the look and feel of quality, assure maximum shelf appeal, to protect delicate and precisely fashioned articles as no lesser box can.

Cosmetic—padded top

SET-UP BOXES BY ROWELL are helping to boost sales for many of the nation's leading toiletries and cosmetics, pharmaceuticals and precision products. A quality set-up box by Rowell can enhance your product, too. Let us make a complete analysis of your requirements. Call or write today.

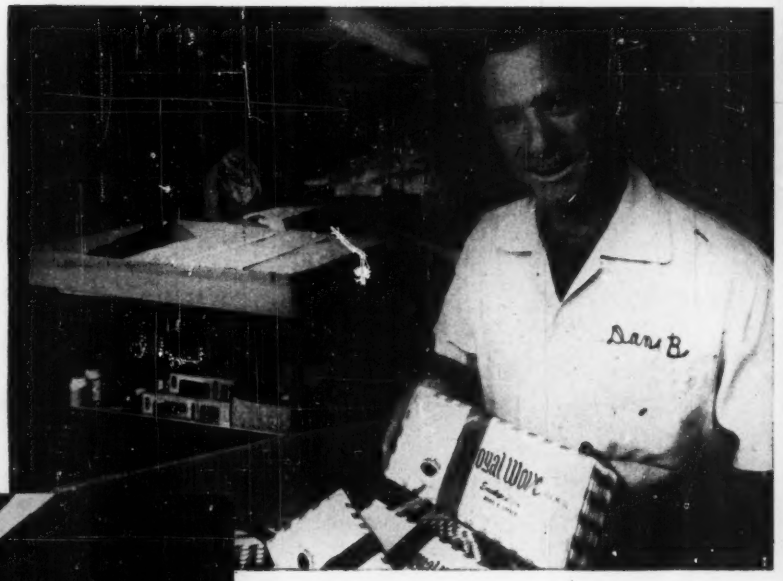
E. N. Rowell Co. INC. **BATAVIA** NEW YORK

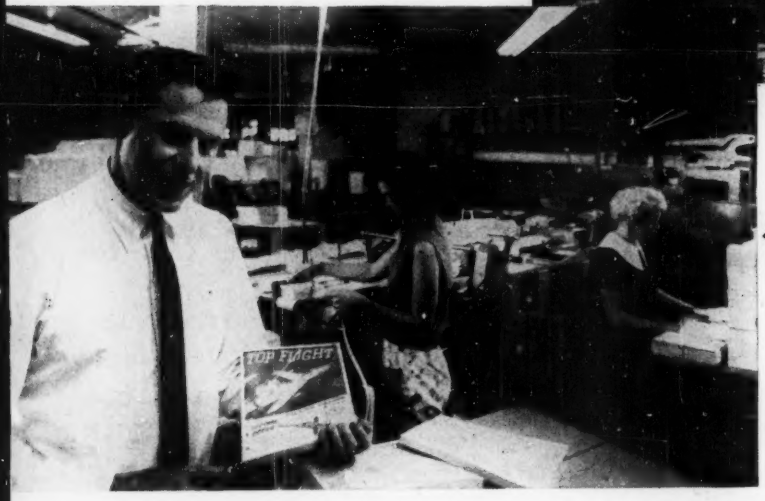
Plant #1 Ellicott St. — Serving the Drug and Special Packaging Field
Plant #2 Jefferson Ave. — Serving the Cosmetic Industry exclusively

BETTER CUSTOMER SERVICE: "We can now give our retailers the important handkerchief display quality of tray-pack gift appeal *plus* package durability . . . The excellent shelf life of polyethylene film also means we may keep a bigger inventory, thus provide better customer service," declares S. Trachtenberg, Packaging Director, I. C. Herman & Company, Inc.

They all save more, sell more, with

LOWER COSTS: "We went to polyethylene because it costs less than other transparent films . . . The results – no breakage, no returns–prove our decision was a smart one," observes Daniel M. Brown, General Manager, Royal Wove Envelope Co.





HIGH SALES APPEAL: "Polyethylene has transformed our packaging operations. Our product now maintains its original shelf attractiveness indefinitely. It stays new and fresh looking in our retail outlets, and has high sales appeal," reports E. Montgomery Robinson, Vice-President, Top Flight Paper Products, Inc.

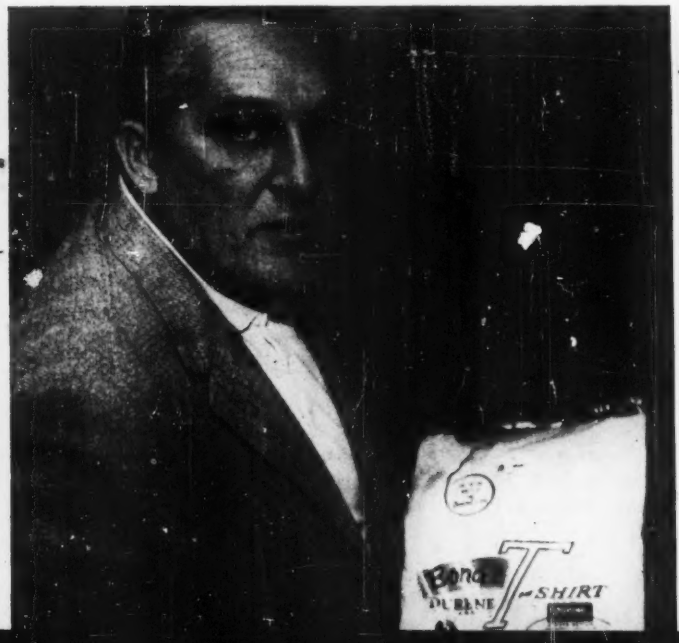
LONGER STORAGE LIFE: "To handle peak season rushes, we make and store our paper plates in off seasons. Polyethylene wraps protect them without tearing or cracking. It saves us money," says W. E. Wilson, Mgr., Product Planning, KVP Sutherland Paper Company. ▶

automatic polyethylene overwraps

With one packaging decision, these consumer product manufacturers cut costs, extended product shelf life, reduced breakage returns, added visual and touch appeal, and boosted sales.

How? By switching to automatic overwrapping with tough, economical, sparkling, printable, transparent film made of BAKELITE Polyethylene.

Isn't it time you fully investigated automatic polyethylene overwrapping for your products? See your packaging supplier. Or write for our *two* special booklets on polyethylene overwrapping. Dept. DV-86H, Union Carbide Plastics Company, Division of Union Carbide Corporation, 270 Park Avenue, New York 17, N. Y. *In Canada:* Union Carbide Canada Limited, Toronto 12.



◀ **INCREASED SALES:** "We attribute a 15 to 20 per cent increase in sales directly to the appeal of polyethylene-wrapped garments over garments packaged in other materials," says R. Wise, President, Cinderella Knitting Mills, Inc.

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You'll Find A Use For
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IMS Silicone Spray is specially designed to eliminate sticking problems in the molding, food and packaging fields and even in the home. Being non-toxic, it is now used widely by the dental profession, the baking industry and by bowling alleys as a release for pin setters. Try a can today and compare the fast acting all-metal valve with many other cans using cheaper spray heads. Remember to look for your FREE BONUS card in every box... only IMS brings you this money saving offer. Keep a few cans handy and your sticking problems are over!

PRICES: $ 2.00 Per Sample Can
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$197.40 Per Unbroken Gross

Still lower prices on larger orders shipped in one gross lots on any schedule you request.

INJECTION MOLDERS SUPPLY CO. INC.
17601 So. Miles Rd. Cleveland 28, Ohio

[*Continued from page 198*]
is that the Government has been literally swamped with comments and criticisms regarding its proposed regulations, which were published last April 29. F&DA originally set a June 28 deadline for receipt of these comments—which it weighs for possible modification of the regulations. However, at press time, the agency had called a public meeting for July 13-14 to hear additional views on safety labeling.

Under the requirements of the law, the precautionary label must include (1) the common, usual or chemical name of the hazardous substance; (2) a bold signal word, such as DANGER, WARNING or CAUTION; (3) a statement of the principal hazard or hazards; (4) precautionary methods describing the action to be taken or avoided, and—where necessary—(5) description of prescribed first-aid treatment. ●

Quick-change labeling

[*Continued from page 113*]

The label web is next threaded around an idler (which is also a feed roll when the printer is not being used) and through a pair of nip rolls, then passes down a heater plate under a hold-down shoe. The heater, held at 130 deg. F., helps to release the label from the backing paper. At the end of the plate, the label is stripped from the backing by an abrupt bend in the backing, which passes up under the plate to a rewind. The label hangs by its trailing edge, however, until a signal from the photo-eye triggers an impressor arm, which pushes the label down onto the envelope, completing the labeling job. The envelopes are stacked and subsequently filled by hand.

Positioning of the label and variations in the photo-eye pick-up can be quickly adjusted by sliding the labeling unit from side to side or backward and forward on rails, and by similar adjustments of the electronic detector. Also, full speed of this machine is reported to be 150 bags a minute.

This on-the-line method of prepricing is of particular value for the hosiery field, where chain stores change their prices rather frequently. With this unit, there are no printed stocks of bags to be made obsolete by a new order. ●

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Phone: TWining 6-8881

Bioriented polypropylene film

[*Continued from page 138*]

cendars, for example, are frequently covered by acetate film where protection and washability are desired.

In recent years, on-machine lacquer or latex coatings have been able to provide some rather limited protection at much lower cost. Mylar laminating film has made inroads where cost was less important than protection or appearance. Nonetheless, a large portion of these laminations continues to be made with cellulose acetate.

Aside from lower cost, a major advantage of polypropylene laminates is their ability to withstand flexing almost indefinitely (viz., the "built-in hinge" in molded polypropylene articles). In tests of book covers made from polypropylene to determine flexing endurance, the following results were obtained:

Material	*Average cycles to failure*
Laminated with 1.5 mil cellulose acetate	440
Laminated with 0.5 mil Kordite 1000	No failure at 100,000 cycles

In the above test, the testing machine folded the specimen 180 deg. into a space equal to three times the thickness of the test specimen. The number of flexes required to produce cracks in the plastic surface was recorded.

Moisture does not penetrate Kordite 1000 laminates as readily as those using cellulose acetate. This reduces the likelihood of delamination. Confirmation was obtained under the same aging tests (ASTM D 756-50, Procedure I) that were discussed earlier in the section on dimensional stability.

The toughness of Kordite 1000 laminates also makes the "casing-in" process less critical, because this oriented film yields sufficiently to conform to creases at the hinge of the book cover, while cellulose acetate films may crack.

Windows. Kordite 1000 film has also been used as a window material for boxes where clarity, strength and shelf life are important.

Automatic machine handling

The problems of heat sealing an uncoated oriented polypropylene film have been difficult.

Up until now, little commercial progress has been made on automatic overwrapping and pouch-forming machines. The best general answer to the problem is a heat-sealing coating, such as Kordite 1500, described above.

The uncoated film feeds and folds well on many different types of these machines, at gauges ranging from 0.5 to 0.7 mil. It cuts off very easily (in contrast to cast polyethylene and cast polypropylene films) without requiring heated knives or knives of specially hardened steel. Yet uncoated oriented film has the same type of sealing criticality normally found when sealing thermoplastics.

As uncoated oriented film approaches sealing temperatures, the orientation tends to relax and some puckering of the film immediately adjacent to the seal can take place. This can be controlled if the film is well restrained during periods of heating, sealing and subsequent cooling in the critical temperature range. Such restraint is often difficult to apply—especially on soft or delicate packages such as those for crackers or baked goods. In these instances, the overwrap applications are now limited to those where the seal is hidden from normal view, as in cup-cake packages using underfolds and a backing board and tray overwrap. Figure 5 illustrates several typical packages wrapped in oriented film, sealed by sliding over a heated surface.

Bread is usually sealed with labels over the ends. Tests have shown that excellent results can be obtained on Kordite 1000 with new low-temperature end labels available from several major label manufacturers. Successful runs have been made, with adequate bottom sealing also, on the AMF 3-175 and some converted AMF 3-122, 3-121 and 3-22 bread-wrapping machines. Figure 6 shows bottom seals made on an AMF 3-175 bread wrapper.

Kordite is carrying out a test program and cooperative development work using a number of machines in order to broaden the applicability of uncoated oriented films.

References

1. Gilden, A. R., and McCulloch, W. J. G., "Extruded Polypropylene Films," *Modern Plastics*, July, 1960, p. 111 *et seq.* ●

DRAMATIC NEW CONTAINER for "PROBLEM" LIQUIDS

Dillon-Beck's NEW *Scepterene* JERRY JUG

Made of a new plastic compound with exceptional characteristics, the Scepterene Jerry Jug is exclusive with Dillon-Beck in the United States.

APPROVED CONTAINER FOR CARRYING
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The Crandall . . .

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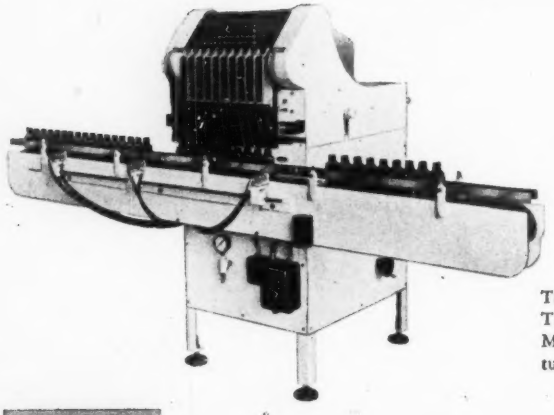
2. can be equipped for any count
3. handles bottles, cans or cartons
4. runs at speeds up to 60 bottles of 100-count per minute—faster where counts are lower
5. can be equipped for automatic or semi-automatic operation



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Milk in polypropylene

A blown polypropylene milk bottle, designed to be run with or in place of glass on the same bottling lines, was a highlight of exhibits at Macropak, the recent 6th Dutch International Packaging Exhibition held at Amsterdam.

Now being tested by dairies in the Netherlands, the new plastic milk

Test bottle of blown polypropylene displayed at Dutch packaging show.

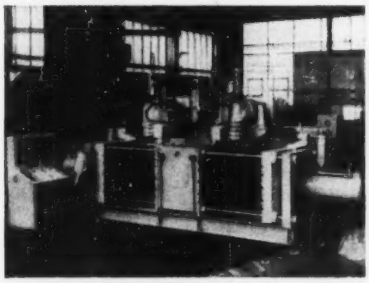
container is claimed to be the first successful blown polypropylene bottle in Europe. It weighs only 8.3% that of comparable glass containers and is said to be capable of 400 trips, compared with 40 to 50 for glass. The manufacturer reports the bottle can be sterilized at temperatures up to 302 deg. F. Similar in shape to traditional glass bottles, it was designed to be fed alone or at random with glass on standard cleaning, filling and capping machines.

Among equipment attracting interest at the show was a newly developed machine for high-speed production of side-weld polyethylene bags and pouches. The unit draws film from two reels and is said to have an output up to 300 bags per minute. Another machine erects, fills and seals fibreboard shippers on a U-shaped set-up. Cartons or other primary packages are fed down one leg to a marshaling section where they are collated and stacked for feeding at right angles into the shippers, which are drawn from an overhead stacking table. Speed at the show was 16 cases per minute. To make heavy-duty polyethylene shipping bags up to 48 by 96 in., a fully automatic, high-speed machine was run with lay-flat tubular material. By halving bag size, production from two reels can reach 4,000 per hour. ●

Packaging Notes

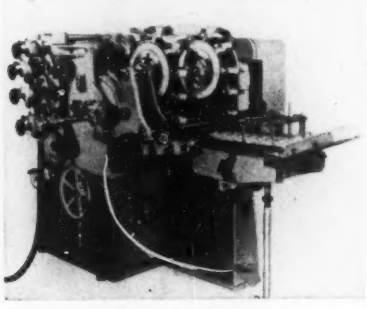
Pressure-sensitive polyethylene tape sustains its tack and flexibility throughout a temperature range of −50° F to 225° F. It's stretchable, conforms to most surfaces to which it is applied, resists water and many chemicals. The bond between the permanent adhesive backing and the four-mil polyethylene surface is said to be excellent. Potential applications of the new, high-tack tape include freezer packaging, closure and sealing of plastic covers and liners, drums and bags.

Giant blow molding equipment turns out thin-wall drum liners of polyethylene at the rate of 120 to 150 per hour. The two-station prototype illustrated has produced containers up to 80 gallons in capacity; is considered capable of blowing objects twice the size without difficulty. Molds operate alternately.



New blow molding machine has produced objects 15 to 80 gallons in size, including 55-gallon drum liners made of U.S.I.'s PETROTHENE 106 polyethylene resin.

Automatic bottle printing machine developed in Switzerland is now being distributed in the U. S. It prints in dry offset—up to four colors in a single operation. Handles cylindrical polyethylene bottles with a diameter range of one to four inches and a printing length of 8¼ inches; or, bottles up to approximately five inches in diameter without printing the whole circumference. Maximum output: 2500 per hour.



U. S. I. Predicts New FDA Ruling Will Spur Food Packaging Use Of Polyethylene

Broader Acceptance of Film, Laminates and Molded Containers Anticipated

The Food and Drug Administration's recent approval of specification-grade polyethylene for food packaging is expected to result in significantly greater use of this versatile plastic. Explains William P. Marsh, Jr., Vice President and Assistant General Manager of Chemical Operations, U. S. Industrial Chemicals Co.: "Although polyethylene has been sold as a food packaging material for some time, many processors have preferred to await FDA's position before investing in development and equipment.

"With approval granted, we look to polyethylene's natural advantages to be put to substantially increased use for packaging butter, cheese, cream and other dairy products—as well as for both fresh and frozen meats. It's just the stimulus needed to spark considerably higher sales in this major market."

Mr. Marsh feels the rise in polyethylene food packaging will be immediately apparent and will have several forms: film; board, foil and cellophane laminates; molded cups; and vacuum-processed containers.

ALL U.S.I. PETROTHENE® polyethylene resins made for food packaging applications fully comply with the new FDA regulations.

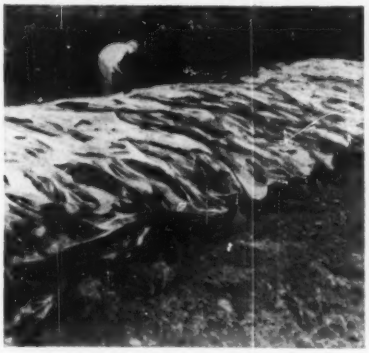
Effects of FDA's regulation approving specification-grade polyethylene as a food packaging material will soon be reflected in supermarkets across the country. Sharp rise in polyethylene-packaged meats and dairy products is foreseen.

Silage Protected by 7-mil Green Polyethylene Film

Trench and bunker silo covers of new 7-mil green polyethylene film are providing better storage conditions than upright silos—at a fraction of the cost. The green pigmentation helps ward off harmful ultraviolet sun rays and is pleasing to the eyes. Furthermore, the film guards against oxygen attack on silage nutrients and still allows for escape of excess gases which form during storing. The 7-mil thickness provides strength for serviceability and long life.

U.S.I.'s PETROTHENE polyethylene is used in the production of the covers. Explains the manufacturer: ". . . because no weak spots can be tolerated, we insist on resins of utmost reliability and uniformity."

The new film is also being used as ice rink liners and swimming pool covers.

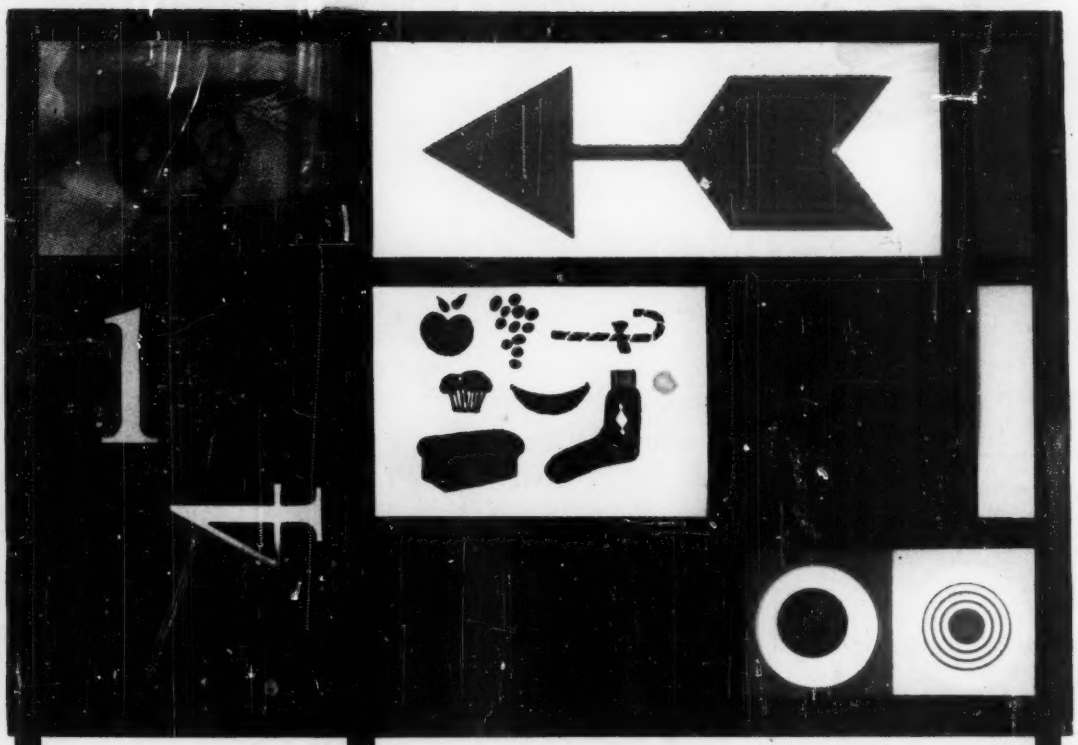


Improved Mold Decorating Process Developed

Look for a new look in molded polyethylene products. A Youngstown, Ohio company reports a unique process said to make it possible to decorate even deep cavities of molds in almost any pattern of grain desired.

According to the announcement, "practically any design that can be drawn in line" can now be incorporated in either cavity and core molds for injection and blow molding or in dies for compression molding. To date the method has been used for houseware, automotive, TV and radio products.

Advantages claimed for decorating molded products: increases sales appeal; provides a durable, mar-resistant finish; offers functional improvements and economies to molders — such as air release for blow molding, etc. A lessening of static charges is also believed to result, but this has not yet been fully explored.



Colorful Polyethylene

...offers powerful sales advantages

Every color of the rainbow — from brilliant hues to subtle pastels can be printed on clear polyethylene film. Colorful designs, sales messages and product information on your packages produce attractive showcases that draw buyers to your products.

Polyethylene is economical. Polyethylene is the least expensive high clarity film you can buy. It can be printed economically at high speeds, with sharp registration and good ink adhesion. Add to this the soft, natural flexibility and durability of polyethylene and you have a versatile packaging material that offers you powerful sales advantages.

Colorful polyethylene packages are now being used for a host of applications, including produce, dairy, bakery, laundered shirt packaging, and soft goods overwrap. Packages can be formed on automatic machines . . . sealed by heat.

U.S.I. produces a number of PETROTHENE® resins ideally suited for producing packaging film of every type — clear or printed, thick or thin, tough or tearable, slippery or sticky. Extruders and converters make these films available in a wide range of thicknesses, with a combination of special properties to meet your every packaging need.

Discuss your packaging requirements with your film supplier. He'll be glad to recommend the type of polyethylene film best suited to your particular application.

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Division of National Distillers and Chemical Corp.
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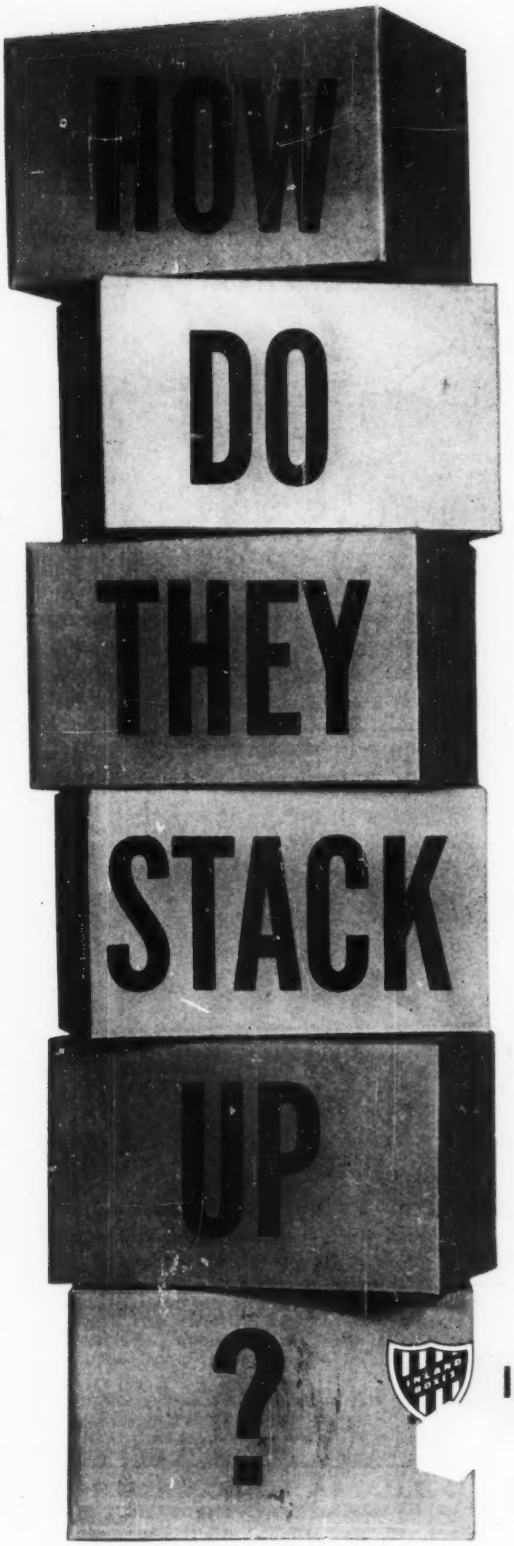
Your **DEPENDABLE** Source for Every Die Need!



By some miracle, the leaning tower of Pisa has kept standing several hundred years. But nobody should depend on a miracle to keep a leaning stack of boxes standing in a warehouse.

So we take great pains to make sure stacks of our boxes do not lean—even if a warehouseman piles them up as carelessly as our photographer did.

How do we do it?

It's seldom easy, but we start by learning how, when and where the boxes will be used, and engineering them accordingly. By providing adequate compression strength through good design and proper material specifications. By using the best-suited manufacturing techniques, including the right types of scoring.

Being this fussy about corrugated boxes may seem strange to businessmen who have never thought much about these things. But the way your boxes "stack up" can be mighty important to your profit picture.

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BOX PLANTS:
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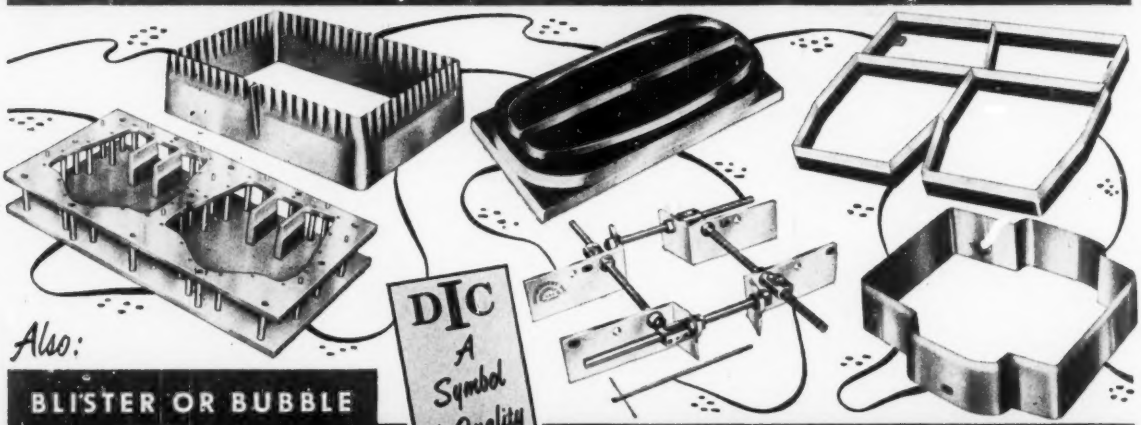

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*Trademark For Salicylamide Suspension

COLONIAL APPLICATOR CO.
VINELAND, NEW JERSEY

The free-piston aerosol container

[*Continued from page 132*]

flush of the propellant space may be necessary before the container reaches the gasser-plugger for vacuumizing and pressurizing.

In selecting a method for pressurizing the container, hypodermic-needle gassing through the rubber plug was first investigated. There were found to be several drawbacks to this approach.

Gassing time, it was found, was high because of restricted flow through the needle. Ordinary hypodermic needles tend to dull rapidly and form a burr on the tip. This can cause a propellant leak through the rubber plug. Hardened stainless-steel needles were found to give better performance, but constant surveillance of needle condition would, of course, be required in actual commercial practice.

Propellants

The experimental work has been generally restricted to compressed gas propellants, such as nitrogen, carbon dioxide and nitrous oxide. Nitrogen has been used primarily, because of its low product solubility. Pressures up to 100 p.s.i.g. are used. Use of liquefied halocarbon and hydrocarbon propellants may be feasible for products which exhibit low solubility for these propellants. The piston would reduce the possibility of emulsion formation with the liquefied propellant, since physical agitation of propellant in contact with product could not occur. The gassing and plugging unit could be modified to allow pressure filling of liquefied propellants.

Container evaluation

Dispensing tests are the primary criterion for judging the over-all performance of the free-piston container with any particular product. Containers are dispensed after storage under a variety of conditions. These include various temperature levels, upright and side storage, full and partially dispensed containers. Auxiliary small-scale consumer testing is carried out to observe dispensing performance under conditions of normal use.

After storage, container pressure is first checked with a gauge fitted with a hypodermic needle for insertion through the rubber plug. Then, during dispensing, product appearance is observed. The exhausted container is weighed to determine residual product retention.

Abuse testing has been carried out on representative products. These tests included dropping in various positions and denting of the wall area to observe effect on piston performance. Abused containers were then subjected to the storage conditions outlined above.

Product considerations

The range of product consistencies considered feasible for this type of packaging lies between the limits of moderately liquid materials which flow readily and highly viscous materials whose extrusion rate through the valve is too slow at practical pressures.

When testing a product for free-piston packaging, several aspects of product behavior in the container should be noted.

There are some products which undergo thixotropic breakdown when flowing through valve orifices. This gives the appearance of a reduced-viscosity product. The viscosity of the original product may have to be altered somewhat in order to give the desired appearance in the dispensed product.

Product stability is another factor which must be considered. Emulsion breakdown during storage may render the product unacceptable for use. Reformulation may be helpful in maintaining product stability.

The compatibility of container components and product should be checked. Test packs will show if any container components are subject to attack by the product. The condition of the container interior, either plain or lacquered, should be observed. Other components that should be included in the examination are the valve and 1-in. mounting cup, the plastic piston and the rubber plug.

At the present time, packaging of food items is limited to products which require no heat process, or for which prevention of bacterial spoilage and mold growth can be effected by hot filling of product. Containers packed by the hot-filling process will probably require a short holding period at the filling

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these 24 money-saving services:

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Modern equipment for swift, dependable service. Latest developments for unit packaging of tablets, capsules, powders, fluids, small and medium-sized pieces into any type heat-sealable films. Let us do the work of producing and packaging your products, often at a lower unit cost. You devote your capital, time and effort to the principal job of selling and promotion.

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Applications for various articles from ⅛" to 1¼" diameter for many industries.

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The sparkling individuality of MASON embossed seals, labels, tags, name plates...

gives quality appeal, added persuasiveness to your product.

THE LOOK OF LUXURY that marks a MASON embossed seal, label or tag means extra attention-getting value for your package...and that means extra sales! Available in gold and silver with bright or satin finish. Also, single or multi-color. Regular, permanent-type pressure sensitive or heat-seal adhesives. Remember, there's a MASON embossed seal, label or tag for every packaging need. Write for full information. Or, check the coupon below for samples.

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Gentlemen:
Please send me samples of seals, labels, tags checked here:

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Company_____ Position_____

Address_____

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- ☐ Seals and Labels—embossed with heat-seal adhesive
- ☐ Anniversary Seals
- ☐ Heavy Metal Seals and Labels
- ☐ Labels with Della Robbia Finish
- ☐ Embossed Tags—single faced and double faced
- ☐ Name Plates with Girder Adhesive—Heat Activated Gutta Percha or Permanent Pressure Sensitive.

temperature in order to insure that the entire container reaches the initial product temperature.

References

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3. Anonymous, *Aerosol Age 4*, No. 2, 20 (1959).
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Sounding Board

[*Continued from page 63*]

Both serve a definite function, yet both can be the source of innovations, merchandising ideas and sound advances in packaging techniques.

The package designer in our company design section is no longer described as a "surface decorator." He must work closely with the sales division, the packaging engineer and the source of production, or vendor. This is a critical time in the life of a package and often determines its success or ultimate failure. The designer, with his knowledge of new materials and new equipment, must constantly think in three dimensions, keeping in mind his design theme and the final desired result: a family appearance for hundreds of different types of packages with extreme variances in size, shape and material.

Training and experience that enable the staff designer to relate the functional with the aesthetic are extremely desirable. Knowledge of typography, hand lettering, color and the different printing processes also head the list of the package designer's qualifications.

Design service available from the industrial-design firm retained by our company runs from consultation to complete identification proposals. This wide experience combined with on-the-job execution by our design staff, we have found, produces a highly satisfactory result.

Robert A. Schiffer, *Vice President-General Manager, Goebel Brewing Co., Detroit:* We let our vendors help us develop an improved package. When we feel an improvement should be developed, we tell our

These cartons were designed by Design Directors, Inc. and produced by United Board & Carton Corp.—both of New York.

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vendors about our needs and ask them to submit ideas. We compare suggestions and select the best one of them for a trial.

Almost all carton vendors have very qualified package designers and come up with excellent ideas. Because they all give us wholehearted cooperation, we feel it only fair then to divide the business between all of the vendors who cooperated in the package change.

Since adopting this approach to developing a new package, we have made several changes that have made a real contribution to the success of the Goebel Brewing Co. in recent years.

Ernest Shapiro, *Director of Art & Package Design, Alberto-Culver Co., maker of cosmetics and toiletries, Melrose Park, Ill.:* Arbitrarily selecting a package designer to solve a particular package-design problem could be as fruitful or as disappointing as one blindly trying to pick a winner at the local track.

I believe it is extremely important for us to evaluate thoroughly the current accomplishments of as many designers and design groups as possible when considering outside design assistance. At the same time it is necessary that our own marketing staff determine the various problems that packaging must help solve, either in new design concepts for new products or revitalizing the design elements for existing products in our line.

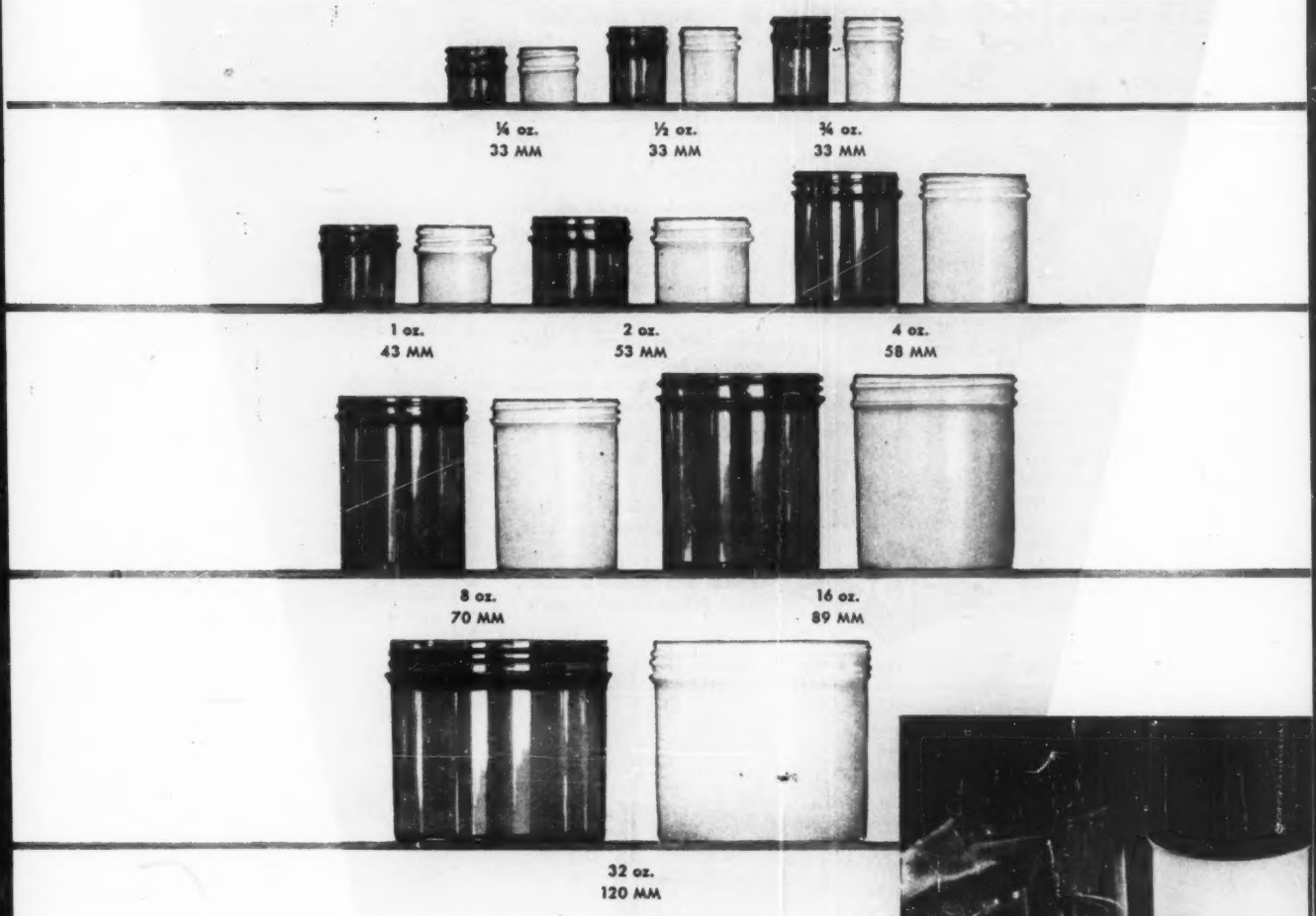
Certain material knowledge is often part of the key to successful package design and we have successfully turned to the experts—design staffs of such companies as the Owens-Illinois Co. and the Reynolds Metals Co.—and with proper direction found the services of the knowledgeable personnel of these supplier companies to be very rewarding to us.

When searching for an approach or concept, the independent designer or design group would be considered whose theories might be somewhat aligned with what we feel may be the particular problem which we are trying to solve.

Basically, packaging is only one spoke in the over-all wheel of successfully putting a product into the market place. It must do its job adequately and still fit in properly with production, advertising and merchandising programs. ●

CELLUPLASTICS

SQUAT JARS



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Whether you are selling soothing salves or fine powders, solder flux or cosmetic cream, the Clearsite squat jar is your answer to better packaging and lower shipping costs. Available from stock in nine sizes in clear polystyrene or linear polyethylene. Can also be molded in a wide range of colors to meet special requirements. Any design can be beautifully reproduced in our large and experienced multi-color printing plant. Standard closures available for all sizes.

Here's an attractive line of competitively priced jars that weigh about one-fifth the weight of glass jars of equivalent capacity. You benefit **three** ways: **better packaging, less breakage, lower shipping costs.** Write for samples and prices—Address Dept. B.

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THE NEW 32 OUNCE PLASTIC JAR

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Lilly's plastics

[*Continued from page 106*]

the basis of new packaging, nor to invite comments. But Lilly received a surprising amount of unsolicited praise from customers.

Indeed, reaction has been so enthusiastic that Lilly—possessing as it does such masses of test data—is now moving swiftly. It sees expanded opportunities for use of plastic packaging. For many products, merchandising appeal is being augmented along with the virtues of light weight and unbreakability. Lilly's Tincture Merthiolate, for example, is now in an attractive red-colored polyethylene bottle with a built-in applicator.

Lilly packaging executives readily agree that the scope of the company's polyethylene-testing program might have confounded smaller packagers. (Lilly's annual sales are $180,000,000; it has 7,000 employees in the U.S., 2,000 elsewhere.) They also concede that today's fast-paced marketing tempo seldom allows a manufacturer to devote three years to a package development, no matter how significant. But they point to the fact that the pharmaceutical producer, perhaps more than any other packager, must be sure a change is for the better. ●

Printing trends

[*Continued from page 96*]

with true halftone printing, flexographic printers have achieved shaded effects with a so-called line-tone technique, in which lines of graduated intensity are used to create a halftone illusion. This inexpensive technique appears to be gaining increased acceptance for low-cost cartons and multipacks, on which it has been used lately to reproduce fairly complex designs.

A notable example of this flexographic process is the recent series of six-pack carriers for the line of Belfast soft drinks. Printed on white litho paper, which is then laminated to kraft paperboard, the flexographic line-tone vignettes of cool glasses of soft drinks are faithful reproductions of the lithographic designs on the cans inside the package.

The lines which create these pictures are much like those of a television image and merge together into a "halftone" at normal viewing

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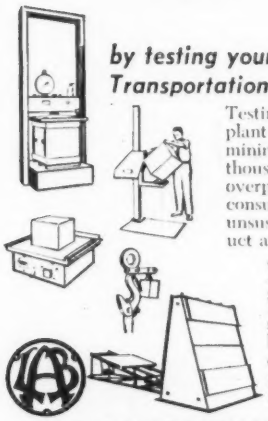

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"We are using our MINI-JECTOR to make closures for Nalgene test tubes. These are friction-fit closures, made of polypropylene, in a triple cavity mold. Of course other similar items could be tooled. Almost any material can be run in the MINI-JECTOR—conventional polyethylene linear polyethylene, nylon, etc."—Nalge Co., Inc.

So says one satisfied MINI-JECTOR user in the packaging field.

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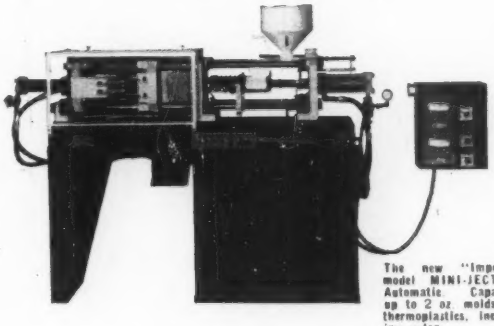

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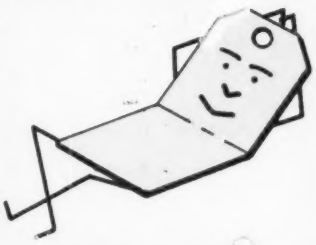

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distance. The process was chosen not only for its economy, but because the solid-color tones achieved in this printing process have a luminous quality that gives striking impact in the supermarket outlet. Carriers for the five soft-drink flavors in the Belfast line were all run on one set of plates, with only a change of color and the drop-in "slug" used to identify each.

Flexography is also on the threshold of the corrugated container industry, where the strong ink lay-down possessed by this process may make it a real "comer."

The standard processes mentioned so far are economical only in printing runs of at least several thousand cartons. But as merchandising and package-designing techniques have become more sophisticated, a need has arisen for a printing method suitable for a few hundred to a few thousand containers. This would enable package designers to test different color combinations of a design and permit packagers to stage small-scale market tests or even limited production runs of special deal cartons without the expense of regular plates and full press runs.

The process that potentially can fill this need is silk screening—a process which is very new in carton applications, though old in the decoration of glass and plastics containers. It is now growing because of improvements in the speed and automation of silk-screen presses, even though such equipment can still apply only one color at a time at a maximum rate of about 3,000 cartons per hour. Biggest advantage of this process is the low cost of equipment and its economy and flexibility in short runs. Also advantageous is heavy color lay-down which permits bold, eye-catching designs. Halftones, however, must be avoided because of coarseness.

Silk-screen printing may become an even greater factor in package printing with the development of faster-drying inks that set immediately instead of in the 6 to 8 seconds required for solvent-based inks. Such inks would permit multi-station presses that can handle many colors in a single pass, according to printing experts at the Printing Ink Div. (IPI) of Interchemical Corp.

Despite present limitations, silk screen has lately been used in several special carton runs. Perhaps the most significant is a Christmas gift carton for Joseph E. Seagram's "Myers" rum, used this past season, which features a dramatic Jamaican Calypso design in four process colors and three fluorescent inks, printed on gold-colored paperboard. Since no product identification appears on the carton, the bright and active design is truly non-commercial. Brand information is confined to a printed cellophane band, which can be discarded for gift sales.

Improvements in basic printing processes are not the only aids to carton decoration that will be available to packagers in the next few years. Several new processes that may be significant are being developed or adapted from other areas.

Perhaps the most important is the use of the new heat-transfer printing—now used extensively to decorate polyethylene bottles—which is said to enable a packager to make inexpensive on-the-line changes in carton copy for special deal offers. Now being tested, this technique installed on the cartoning line reportedly could save thousands of dollars.

Also under research is a three-dimensional printing technique intended to give great apparent depth to surface designs. Making use of a special photographic technique, such 3-D designs could add tremendous impact to illustrated packages. This process is at least two years away from commercial use, however.

A "photo-polymer" plastic is now being used to a small extent for fabricating letterpress plates. And other types are also being investigated as replacements for metal in such other applications as gravure rolls, where an easily formed plastic with strong resistance to wear might greatly reduce the cost and time of engraving. While promising, such materials are the subject of long-term research and will not be available in the near future.

From these developments, it is obvious that current trends in package printing are dynamic and should readily achieve the expansion in fine design which is indicated by the GPI prediction that ink sales for packaging will expand to $158,000,000 in 1965—a growth of 21%. Cartons are only a part of this growth.

Another major field, flexible packaging materials, will be covered in a second article in this series, to be published in a forthcoming issue. ●

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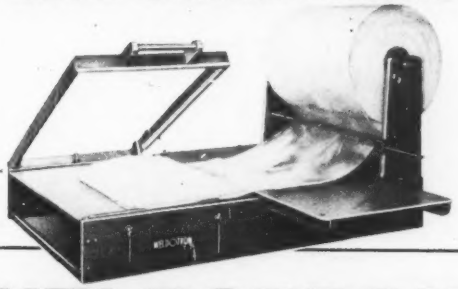

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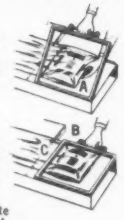
MULTI-SEAL L-SERIES IMPULSE SEALER

Whether you use regular poly-films or the increasingly popular shrink films, the package can be formed faster and at lower cost with portable Multi-Seal. It seals all open sides of V-folded films with just one stroke. Uses power only for an instant while the seal is made because it is a thermal impulse unit — the best type of machine for use with shrink films. Forms bags 2" to 24".

STEP 1 Operator inserts product into V-folded film. Side A is sealed simultaneously with previous package.

STEP 2 Operator presses handle and remaining sides B & C are sealed instantly. Cutoff is automatic!



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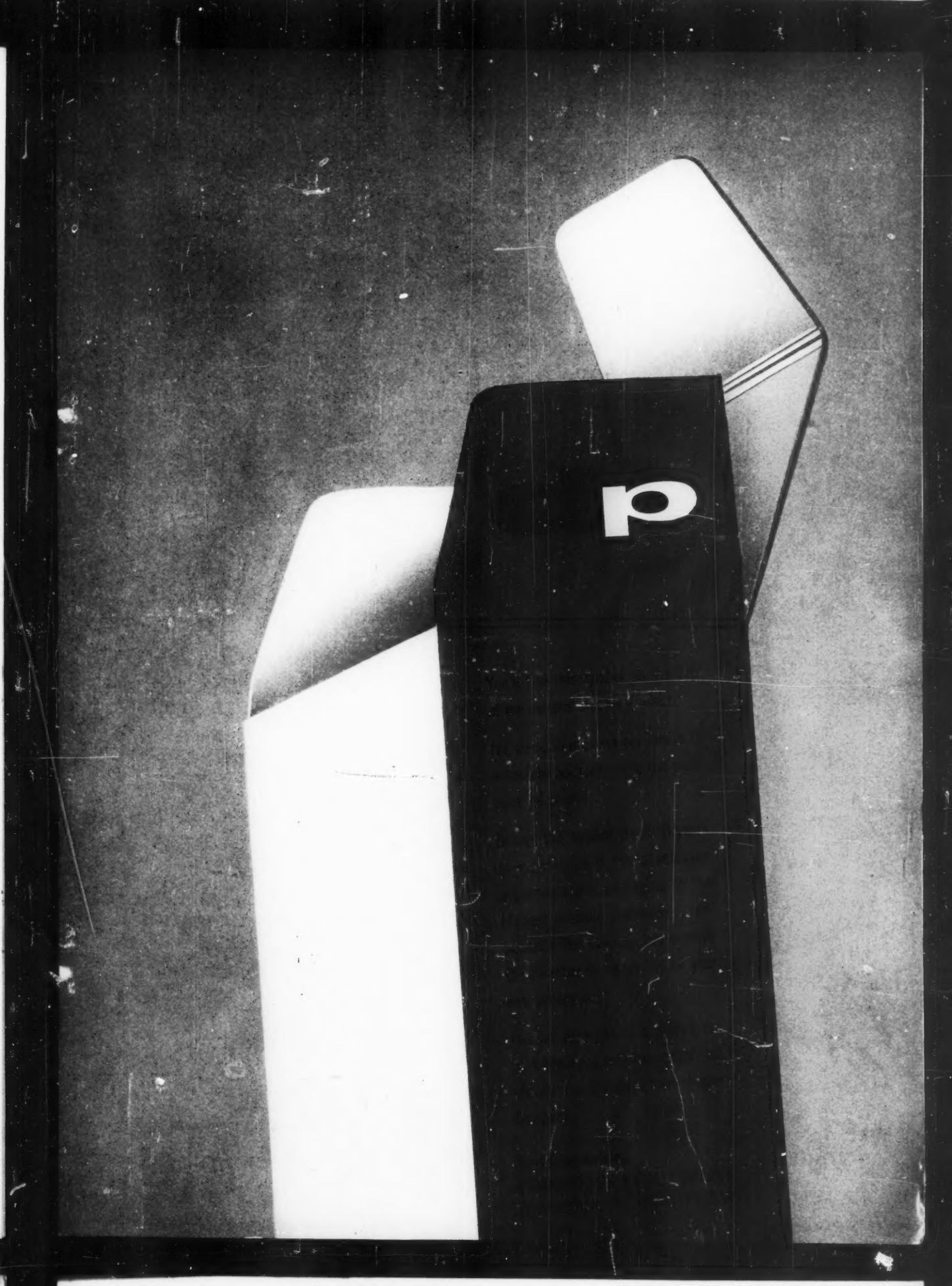
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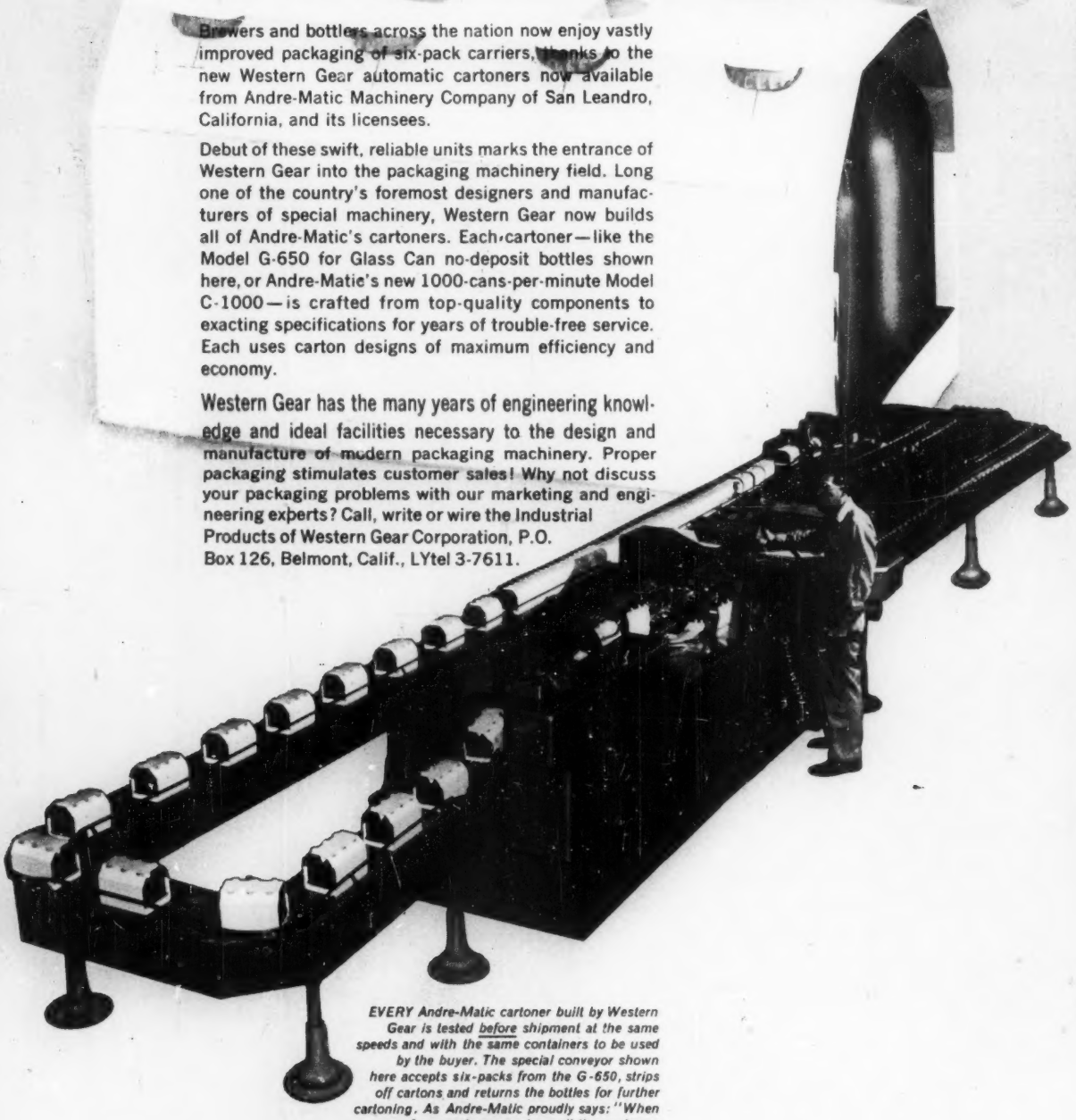
HOW WESTERN GEAR SERVES THE PACKAGING INDUSTRY

Now: BETTER BEVERAGE PACKAGING By Western Gear for Andre-Matic

Brewers and bottlers across the nation now enjoy vastly improved packaging of six-pack carriers, thanks to the new Western Gear automatic cartoners now available from Andre-Matic Machinery Company of San Leandro, California, and its licensees.

Debut of these swift, reliable units marks the entrance of Western Gear into the packaging machinery field. Long one of the country's foremost designers and manufacturers of special machinery, Western Gear now builds all of Andre-Matic's cartoners. Each cartoner—like the Model G-650 for Glass Can no-deposit bottles shown here, or Andre-Matic's new 1000-cans-per-minute Model C-1000—is crafted from top-quality components to exacting specifications for years of trouble-free service. Each uses carton designs of maximum efficiency and economy.

Western Gear has the many years of engineering knowledge and ideal facilities necessary to the design and manufacture of modern packaging machinery. Proper packaging stimulates customer sales! Why not discuss your packaging problems with our marketing and engineering experts? Call, write or wire the Industrial Products of Western Gear Corporation, P.O. Box 126, Belmont, Calif., LYtel 3-7611.



EVERY Andre-Matic cartoner built by Western Gear is tested before shipment at the same speeds and with the same containers to be used by the buyer. The special conveyor shown here accepts six-packs from the G-650, strips off cartons and returns the bottles for further cartoning. As Andre-Matic proudly says: "When one of our cartoners arrives, all the customer has to do is install it and push the button."

WG INDUSTRIAL PRODUCTS DIVISION

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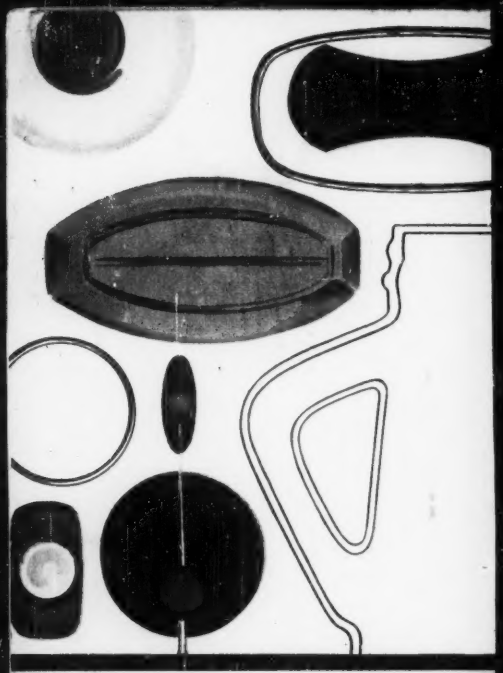
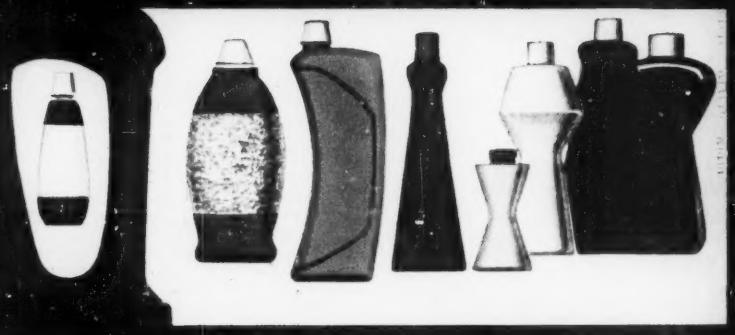
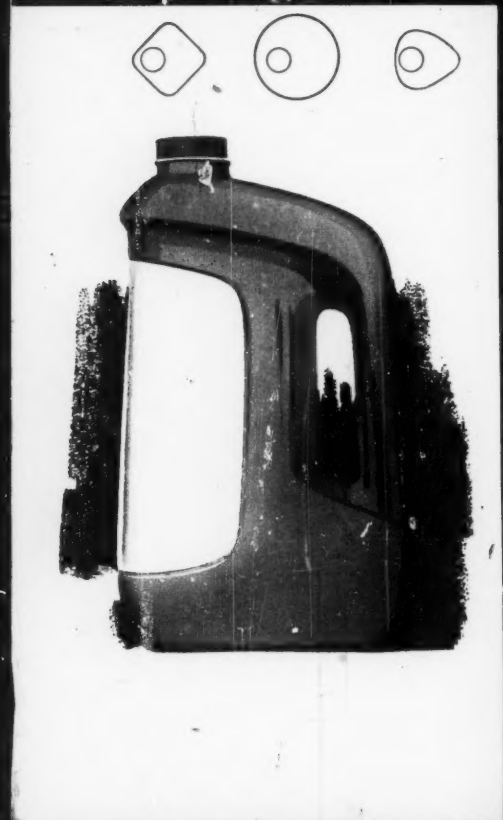


NO MATTER HOW YOU LOOK AT IT CONTINENTAL HAS THE RIGHT PLASTIC BOTTLE FOR YOU





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